Psychological exploration of the cognitions preventing smoking cessation or maintaining smoking in Chronic Obstructive Pulmonary Disease (COPD) sufferers

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Acknowledgements

Preface

The literature review has been prepared in a format for submission to COPD: Journal of Chronic Obstructive Pulmonary Disease with a Vancouver Referencing Style. Supplementary materials are enclosed for the purposes of this portfolio, some of which will be removed prior to submission for publication.

The empirical paper has been prepared in a format for submission to Psychology and Health and has an APA referencing style. Supplementary materials are enclosed for the purposes of this portfolio, some of which will be removed prior to submission for publication.

The guidelines for journal submission can be found in the appendixes of each chapter.

The executive summary has been prepared as a more accessible paper for easier reading. It is aimed at service users and staff members.

Chapter 1 = 7974 words

Chapter 2 = 8677 words

Chapter 3 = 1950 words

Abstracts = 761 words

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CHAPTER 2 – EMPIRICAL PAPER

CHAPTER 3 – EXECUTIVE SUMMARY

Thesis Abstract

This thesis has been undertaken as part of the academic requirements for a Professional Doctorate in Clinical Psychology. The research questions were derived from the author's prior clinical experiences. Smoking is linked to depression, anxiety and mortality amongst people with Chronic Obstructive Pulmonary Disease (COPD); cessation is the most important step in managing the condition. Chapter 1 of this thesis describes a review of the scientific literature that has researched why people with COPD continue to smoke. Twenty papers were found following a systematic search of electronic databases. All papers were assessed for quality and none were excluded on quality grounds. A thematic analysis identified fifty-two reasons under seven related themes: conflicting relationships in smoking; conflicting ideas about the relationship between COPD and smoking; conflicting views on control in smoking; damaging ways of treating the self; pessimism about change; mitigating and optimistic approaches to smoking; conflicting advantages of not quitting. Contradictory beliefs were found within each theme. Chapter 2 describes an empirical study that used Q-Methodology to understand how these individual reasons relate to one another to form viewpoints. Twenty-two people with COPD who smoked completed Q-sorts; by-person factor analysis identified three latent factors: 'Stoic Fatalism' describes smoking as an enjoyable choice that is justified by there being no point in stopping because the damage is done. 'Optimistic Passivity' is characterised by it not being too late to stop, but guilt from continued smoking is resolved by strategies such as planning to stop in future. 'Ambivalent Masochism' describes being a slave to cigarettes, desperate to quit, yet really enjoying smoking. Difficulties with nicotine withdrawal, and management of low mood and anxiety were also strongly cited as reasons for continuing to smoke in the first two viewpoints. The integration of psychotherapeutic and smoking cessation strategies is discussed. Chapter 3 is an accessible summary for service users.

Chapter 1

Literature Review

Why do people with Chronic Obstructive Pulmonary Disease (COPD) continue to smoke?

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Figures and Tables

Abstract

Attempts to understand predictors of smoking cessation and to enhance strategies for those with Chronic Obstructive Pulmonary Disease (COPD) have yielded questions about the differences between people who smoke with and without COPD. Psychological intervention types for people who smoke with COPD appears homogenous in their efficacy, which may indicate a lack of clarity about the beliefs that perpetuate smoking; the aim of this review is to identify and describe the research evidence about the beliefs held by people with COPD who continue to smoke. A systematic literature search of AMED, BNI, CINAHL, Embase, HBE, HMIC, Medline, PsycINFO, PubMed, Web of Science Core Collection and EThOS was conducted to identify papers which contained results on why COPD suffers cannot, do not, or struggle to quit smoking. Twenty papers met the inclusion criteria and were quality-assessed using CASP and AXIS tools: five papers were judged excellent quality, twelve good and three moderate. None were excluded on grounds of quality. A thematic analysis yielded seven related themes: conflicting relationships in smoking; conflicting ideas about the relationship between COPD and smoking; conflicting views on control in smoking; damaging ways of treating the self; pessimism about change; mitigating and optimistic approaches to smoking; conflicting advantages of not quitting. Most themes contained contradictory viewpoints which cast doubt on the utility of existing models which rely on simple taxonomic classification of attitudes. Further research is needed to identify how these contradictory viewpoints correlate, and if there are relationships between these viewpoints, emotional states, and motivation to quit.

Keywords

COPD, Smoking, Cessation, Cognitions, Beliefs, Reasons

Funding Details

Disclosure of Interest

None

Introduction

Chronic Obstructive Pulmonary Disease

Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term for Chronic Bronchitis (damaged bronchi) and/or Emphysema (damaged alveoli), caused mainly by smoking tobacco products (1). COPD is a progressive disease, and whilst often lengthy in trajectory, it is ultimately a fatal condition (2). Exacerbations of COPD, where symptoms of COPD are worsened rapidly, occur frequently and are often triggered by infections in the lungs, air pollution and allergies (3); repeated exacerbations damage lungs further. Lung damage causes difficulty exhaling, and feelings of breathlessness often lead sufferers to decrease their physical activity. Mobility is then further reduced through increased muscle weakness/inefficiency and decreased lung function. Quality of life is reduced, with anxiety, depression and panic attacks being highly prevalent compared to the non-COPD population (4). There is no cure for COPD, but there are numerous treatments which include specific exercise programmes, medicines and inhalers; however, smoking being the primary cause of most COPD indicates cessation as the single most important, and effective, treatment for reducing the rate of progression of the disease (1). Prevalence of continued smoking among COPD sufferers is high at between 30% to 43% (5).

Neurobiology of Smoking

A large body of evidence indicates that the stimulant found in tobacco products, nicotine, is highly addictive. Nicotine acts upon nicotinic receptors in the acetylcholine system which leads to the release of dopamine. It also augments the release of glutamate and GABA, which over time further increase excitation of dopaminergic neurons in response to nicotine. Various other biochemical changes in the brain also occur with exposure to nicotine, and result in desensitisation to it (6) (See Appendix A Figure 2). The commonly believed concept of increased metabolism is more controversial, with some large-scale studies showing no difference in basal metabolic rate between smokers and non-smokers (7). Withdrawing from nicotine leads to side-effects such as cravings for smoking, irritability, sleep changes, and often an increased intake of food; hence cycles of repetitive usage of tobacco products commonly occur in those who smoke (3). Addiction models link physiological and behavioural theories but exclude cognition

and beliefs; they do not satisfactorily explain why people make decisions to initiate smoking, continue, or fail to quit smoking when ill.

Socio-Cognitive Models of Health Behaviour

The Theory of Planned Behaviour (TPB) and the Health Action Process Approach (HAPA) are two of the most common models used to explain health-related behaviour and behavioural change (3). TPB has been applied to smoking cessation with positive behavioural control beliefs being the best predictors of intentions to quit smoking. However, a non-TPB construct of belief in susceptibility to negative health effects was found to be superior to other components of the model (8). The TPB model (see Appendix A Figure 3) has been expanded to include denial (self-exempting) beliefs, such as believing one smokes too few cigarettes to have any impact on health; these are also used to justify continued smoking (9).

In contrast, the HAPA model (see Appendix A Figure 4) incorporates concepts of outcome expectancies and self-efficacy in decision making. Williams, Herzog and Simmons (2011) studied risk perceptions using the HAPA model, finding those who did not intend to quit smoking also perceived lower health risks (10). Radtke, Scholz, Keller and Hornung (2012) found compensatory health beliefs (e.g. I do not need to quit because I exercise) are more negatively correlated with intentions to quit smoking than other HAPA constructs (11).

Conceptually, models such as TPB and HAPA are used to understand predictors of health-related behaviours, and as such they are utilised to measure attitudes associated with behavioural change, rather than what maintains problematic or unhealthy behaviour. However, it could be inferred from the above models that compensatory beliefs, low-risk susceptibility, self-exemption and low behavioural control predict continued smoking. There are limitations of utilising behavioural change models with smoking; it is an addictive (rather than purely volitional) process, thus the models exclude the established neurobiological components. Stress reduction and weight control have also been cited as reasons for smoking, which are absent from models (3). No one model incorporates all categories of belief. Without knowing which beliefs are held by COPD sufferers who continue smoking it is difficult to comment on the utility of any of these health behaviour models.

Relationships between COPD, Smoking & Anxiety

COPD sufferers who smoke experience higher levels of anxiety and depression compared to ex-smokers (12,13). Interactions have been shown between smoking, anxiety, depression and mortality suggesting that psychological difficulties are related to smoking and COPD progression (14). Anxiety disorders, from a Cognitive-Behavioural perspective, arise due to neutral information being processed as threatening, which in turn leads to distress e.g. that a lack of phone call is interpreted as something terrible having happened to a person (15). Paradoxically, smokers with COPD appear to undertake the opposite process (simultaneously) with threatening information about smoking being neutralised (see Appendix A Figure 5).

Cognitive-Behavioural Model of Addiction

The theories of Cognitive Behavioural Therapy (CBT) have been applied to excessive alcohol consumption and drug taking to model addiction processes, adding a concept of facilitation beliefs (that are not stratified into categories as in the TPB and HAPA) which provide permission to take the substance (16) (Appendix A Figure 6). The model differs in that it is a cyclical maintenance model, compared to TPB and HAPA which are mostly linear behavioural change models. Whilst tobacco smoking has been neglected within applications of this model, it may offer a framework by which to understand the hypothesised parallel, yet opposite, information-processing procedures of anxious COPD-suffering smokers, whilst still incorporating the physiological components of addiction. Application of this model does prompt the question, what are the facilitation beliefs of smokers with COPD?

Reviews of Interventions for Smoking Cessation

A Cochrane review of Motivational Interviewing (MI) for smoking cessation found it has a limited, but higher success rate than brief advice or no treatment for healthy smokers (17). Evidence for MI for smoking in COPD is limited to one study stating it is ineffective at evoking reasons for change, and inhibited by deviation from MI protocols (18). The Cochrane review for smoking interventions with COPD concluded that using a combination of pharmacotherapy and high intensity behavioural support appears more effective than high intensity behavioural support alone; however the reviewers were not able to find any evidence of difference

between the effectiveness of different types of behavioural interventions (BI) or pharmacological approaches (19). A relative lack of understanding of the differences in need for smoking cessation interventions of healthy smoking versus COPD sufferers is also highlighted.

Rationale for Review

Van Eerd, van der Meer, van Schayck and Kotz (2016) found no evidence amongst the reviewed articles for differences in effectiveness of BI. They describe the effect of BI on cessation as having a small but significant effect. However, to improve interventions there is a need to understand what maintains smoking in those with COPD to inform exactly what is undertaken in terms of psychological intervention. The reported homogeneity of BI effectiveness may be due to equivalence, but it could be equally due to a lack of precision in the interventions (i.e. what exactly are they targeting?). There remains a lack of broad understanding of the psychological processes involved in people with COPD unable, or unwilling, to stop smoking. The lack of evidence to support MI for smoking cessation implores an understanding of the beliefs that individuals hold to perpetuate their smoking.

Aims

There remains no adequate psychological model to satisfactorily explain the maintenance of highly-damaging smoking in those with COPD; furthermore, there is no published systematic review of the studies that have attempted to understand why COPD sufferers continue to smoke. This review will interrogate the evidence base to create a broad understanding of the reasons people with COPD continue to smoke. This will provide a broad knowledge base from which to undertake further research.

Method

Search Strategy

A systematic strategy was undertaken to search for, and identify, academic papers that are related to the research question of 'why do people with COPD continue to smoke?'. Electronic database searches were undertaken until June

2017 using combinations of the terms with wildcards (allowing for different endings of words): Attitudes, Belief, Reasons, Motivation, Why, Experiences, Smoking, Quitting, Cessation, Give Up, Continuing, COPD, Chronic Obstructive, Emphysema and Bronchitis. Appendix B shows search strings with a diagram of the process (Figure 7).

The following databases were searched: AMED, BNI, CINAHL, Embase, HBE, HMIC, Medline, PsycINFO, PubMed. Web of Science Core Collection was also searched. No date, geographic, or language restrictions were placed on the search to maximise results. To counteract publication bias the British Library's Electronic Theses Online Services (EThOS) was also searched for 'grey literature', in the form of unpublished studies and doctoral dissertations. Hand searches for additional articles identified in reference lists and citations was undertaken using the Staffordshire University eJournals service. All results were extracted, cleansed (universally formatted for comparison), and sorted using Microsoft Excel for screening.

One article required contact with the study's lead author to clarify whether the inclusion criteria were met, the article was subsequently excluded.

Inclusion Criteria

- The paper contains or identifies reasons or viewpoints from COPD sufferers, directly or indirectly, about why they continue to smoke.
- The paper is a research study or systematic literature review
- The study is about COPD, or if about more than one condition then the main health problem is COPD, the results about continuing to smoke in the COPD group are clearly distinguishable from the non-COPD groups.
- The study seeks to identify psychological/qualitative reasons why people continue to smoke, or contains at least a partial study of these reasons.

Exclusion Criteria

- Not containing data on COPD and barriers to quitting smoking.
- Letters, conference papers, opinion, non-systematic reviews or commentary articles
- COPD as a cohort of a larger study is not distinguishable from the other groups in terms of results around not being able to stop smoking.
- Studies that test or evaluate an intervention (be that psychological or pharmacological) to quit smoking

- Studies that seek to find out how people change their behaviour/predictors (e.g. studies that only report physiological and pharmacological predictors), unless there is clear evidence of review of psychological/qualitative predictors of continuing to smoke with COPD
- Studies that examine people's experiences of actually quitting smoking, unless there is clear accounting of barriers to quitting smoking with COPD.

Methods of Appraisal

Qualitative research papers selected for review were appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist (20). The questions from the CASP (plus a supplementary question about potential conflict of interest/funding sources to ensure parity with the AXIS tool) were entered into a spreadsheet and for each study the respective questions were graded for quality: Excellent (0.9+), Good (0.7-0.89), Moderate (0.5-0.69), Poor (0.3-0.49) and Very Poor (<0.3) (see Table 2). These grades were calculated by answering all sub-questions (see Appendix C) with points based categorical responses, each with a numeric value: Yes (3 points), Partially (2 points), Cannot Tell - but could be implied (1 point), No (0 points), Not Relevant (0 points and reduce scoring denominator by 3 points). The sub-questions were totalled (where applicable) for each question and then divided by the maximum possible (minus any not applicable) to convert to a score (0-1) for each question. These question ratings were averaged to give a total rating for the paper and percentage for the paper. Weightings were considered but deemed unnecessary as virtually all questions on the CASP could highlight areas of bias. Quantitative research papers selected for review were all cross-sectional studies utilising questionnaires. The AXIS Cross-Sectional Study Review Tool (21) was selected for the purposes of this review. Numerical scores were assigned in the same way as to the CASP, but due to the simpler layout (i.e. no sub-questions) each question was scored 0-3 and an overall % quality given (see Table 3). To ensure rigour, inter-rater reliability was checked with a senior Clinical Psychologist and established at 0.85.

Methods of Synthesis

Data was extracted from the papers and followed principles from Noyes and Lewin (2011) and Sandelowski and Barroso (2002) (22,23). Deductive thematic analysis (24) was utilised to identify themes in the data (see Appendix C for full details).

Results

The search screened eight-hundred and ninety papers, and yielded twenty that met the inclusion criteria for this review (see Appendix C). Seventeen (85%) papers used qualitative methodology, and three quantitative. Nine papers researched attitudes and reasoning for not quitting smoking with COPD (Bjarnason, Mikkelsen, & Tønnesen, 2010; Eklund, Nilsson, Hedman, & Lindberg, 2012; Halding, Heggdal, & Wahl, 2011; Hansen, Walters, & Wood Baker, 2007; Lundh, Hylander, & Törnkvist, 2012; Poureslami, Shum, & FitzGerald, 2015; Schofield, Kerr & Tolson, 2007; van Eerd, Risør, van Rossem, van Schayck, & Kotz, 2015; Wilson, Elborn, & Fitzsimons, 2011) (25–33). Three papers examined experiences and relationships to smoking (Gullick & Stainton, 2006; Jonsdottir & Jonsdottir, 2007; Nykvist, Larsson, & Dahlborg Lyckhage, 2014) (34–36). Five papers examined the smoking cessation experiences of people with COPD (Burrows & Carlisle, 2010; Lefcoe, Pederson, & Blennerhassett, 1988; Vuong, Hermiz, Razee, Richmond, & Zwar, 2016; Hilberink, Jacobs, Schlosser, Grol, & Vries, 2006; Lundh, Alinaghizadeh, Törnkvist, Gilljam, & Galanti, 2016) (37–41). Finally, three papers researched broader experiences of COPD and treatment but included viewpoints on smoking (Jones, Hyland, Hanney, & Erwin, 2004; Lindqvist & Hallberg, 2010; Robinson, 2005) (42–44). The results of the papers, with a synopsis of their noted strengths and weaknesses, are given in Appendix D. Detailed systematic analysis of quality can be found within the Summary of Quality .

Summary of Quality

Overall quality was rated 81.60% (±10.4%) for qualitative studies and 83.3% (±2.9%) for quantitative studies, none of the papers were of such low quality to exclude them from data synthesis. Five papers were assessed to be of excellent overall quality with an overall score of 90%+ (26,27,32,37,39). Twelve were rated as having a good overall quality scoring of between 70% and 89.9% (25,28–31,33,35,36,40–43). The remaining three papers (34,38,44) were of moderate quality (50-69.9%). Specific scorings of papers can be seen in Tables 3 and 4 (Appendix F); quantitative studies and the relevant questions are discussed under the headings derived from the CASP. Average section qualities are given for the qualitative studies due to their dominance in this review.

Aims and Methodology

All studies reviewed had clearly stated aims. Qualitative or quantitative methodology were respectively deemed appropriate for such aims. Scores were universally excellent for these sections of the appraisal.

Research Design

Research designs were considered fully appropriate to all but three of the qualitative studies reviewed, with an average score of 90%. Lefcoe, Pederson, & Blennerhassett, (1988) offered no explanation as to how the method of collection of data was decided or the considerations taken in this process. Poureslami, Shum, and FitzGerald (2015) attempted to present in depth information on how the design was decided and involved COPD sufferers in the design of the project; however, the paper is very unclear as to exactly how a prior questionnaire, generated from a literature review, and on which the interview process was based, related to their qualitative study. References to coding answers to qualitative questions as correct/incorrect during a pilot were particularly opaque in their understandability. The study design of Robinson (2005), whilst appearing appropriate, did not explicitly justify the choice of unstructured interviews or the approach to data analysis. The research designs of the three quantitative papers were judged appropriate.

Recruitment

Recruitment aspects of the qualitative studies were of good quality, with an average score of 82% on CASP criteria. However, the sub-question regarding discussions around recruitment had the lowest mean sub-question score on the CASP across all qualitative papers. Sixteen qualitative papers used a purposive or convenience sample; Robinson (2005) used a random sampling method (although did not detail how) to select 10 from 54 purposively selected participants. Recruitment was graded as good or excellent for ten of the qualitative papers. The remaining seven papers (28–30,34,35,42,43) were graded as moderate due to a lack of detail around the recruitment process which increases potential for sampling bias. All papers contained as a minimum a brief description of their sampling procedures, but typical omissions included not reporting invitation/response rates, not reporting reasons for declining to take part where these number have been recorded, not being clear on inclusion criteria or why specific criteria were used. This lack of reporting increases risk of selection bias. Of the quantitative papers, Hilberink, Jacobs, Schlosser, Grol and Vries (2006) and Lundh, Alinaghizadeh,

Törnkvist, Gilljam, and Galanti (2016) showed robust recruitment strategies, but the former were legally prohibited from following up non-responders, and the latter did not justify their sample size, which was less than one sixth the size of the former study. The study by Bjarnason, Mikkelsen and Tønnesen (2010) was less robust as refusal rates were not reported, and it remains unclear why a group of never-smoked COPD sufferers were included in the similarly small and unclearly justified, sample.

Data Collection

Data collection was rated an average score of 80% for the qualitative studies. Thirteen of the seventeen qualitative studies were graded as good or excellent, with those rated as good addressing most issues excepting saturation of data (joint second lowest scoring CASP sub-question on average). Three papers (29,34,43) were rated as moderate and lacked details about their interview methods, as well as not discussing saturation of their data: Gullick and Stainton (2006) additionally did not discuss the settings for the intreviews sufficiently, Poureslami et al. (2015) account of the development of their interview schedule was unclear, and Robinson (2005) lacked detail on their justification of methods. Lefcoe et al. (1988) was rated as very poor due to general omissions in describing how data were collected other than stating via interviews. Of the quantitative studies, basic data were adequately described in all three but the use of non-standard scales was of concern: Hilberink et al. (2006) utilised an arbitrary un-validated measure of smoking cessation intention to categorise participants' contemplation levels; although other measures were validated, attitude scales were non-standardised but had good internal consistency (Cronbach's alpha >0.7). Lundh et al. (2016), whilst similarly using standardised measures for most aspects of the study, also used a non-standardised arbitrary single time point measure for intention to quit, converted into simple binary grouping. Bjarnason et al. (2010) utilised a similar approach, but with non-standardised questionnaires for cessation motivation as well as attitudes and emotions towards COPD and smoking; the latter described as "qualitative data" despite being a forced choice questionnaire.

Relationship to Participants

Four studies were rated as moderate quality in this domain. It was difficult to ascertain if location or recruitment had been considered at all by Nykvist et al. (2014) and whether this, and the formation of the questions, had been fully considered by Poureslami et al. (2015). Schofield and Tolson (2007) conducted a

secondary analysis so it was impossible to consider these factors fully. Jonsdottir and Jonsdottir (2007) utilised a clinician involved with their participants' care (instead of a researcher) to inform and recruit which may have placed expectations on the recruits. Gullick and Stainton (2006) were rated poor on this question due to difficulties ascertaining if there was any consideration of bias in their questions or recruitment, although some reflection on this is implied through the type of methodology. Jones et al. (2004) were rated very poor as there was no evidence of these considerations. The remaining eleven studies demonstrated some degree of consideration to the relationship to their participants, gaining a good or excellent rating. However, despite consideration of most factors, it was not clear if Halding et al. (2011) also obtained participants in the same manner as Jonsdottir and Jonsdottir (2007). The mean quality for this section of the qualitative papers was 75%. Whilst relationships to participants is less of a concern with questionnaire based quantitative studies, nothing about the three studies was considered of concern in terms of non-response bias, but it was not clear if the recruiting nurses were also treating the patients in Lundh et al. (2016).

Ethical Issues

Consideration of ethical issues had a mean quality standard score of 71% for the qualitative papers. Ten of the qualitative papers were rated as good or excellent in terms of their consideration and handling of the ethical issues. Better ratings were given to those which gave very clear and detailed accounts of the implementation of the principles, as well as receiving approval from an external body. Two studies were rated as moderate, one of which achieved ethical approval and considered some aspects, but also interviewed family members with no intention of using the data in the study which was ethically questionable (29). Van Eerd et al. (2015) contained very little evidence of ethical considerations other than approval. Four studies were rated as very poor for not discussing ethical considerations or approval at all in their respective papers (33,34,38,44). All three quantitative studies received ethical approval and discussed informed consent.

Data Analysis and Rigour

Data analysis was rated as good or excellent for fourteen of the qualitative papers, with excellent grades generally being assigned to those which provided an in-depth discussion of their analysis process with evidence of critical examination of their roles for bias. Moderate grades were assigned to three papers (30,38,44) for partial (or lack of) consideration of contradictory data despite its apparent presence,

lack of clarity as to how themes were derived, and in all three cases a lack of reflection on the effects of own bias in selection and analysis of the presented data. The mean quality of the seventeen papers was 86%. Of the quantitative studies, the lack of control of confounding variables in Lundh et al. (2016) introduced weakness into the process, and the *a priori* adjustments were unclear. Also, follow up status was verbal self-report so accuracy of smoking status cannot be assured. Data analysis appeared relatively robust in Hilberink et al. (2006) but the details of specific tests were a little sparse. Bjarnason et al.'s (2010) analysis and rigour were generally well described, but treated their smoking attitude data as qualitative, thus avoiding factor or regression analysis with quitting motivation, which appeared a strange omission as they later speculate on the relationships in their findings.

Results, Findings and Value

Qualitative papers averaged 92% quality for findings and 80% for value. All qualitative papers were graded as good or excellent quality in terms of statements of findings. However, four of the five papers rated as good (30,34,38,44) were vague about, or lacked, validation of their data through triangulation or participant validation. A few papers had errors in their reporting of data but these were minor (e.g. putting data in the wrong section of a table (29) or labelling the wrong quote for an interpretation (30)). Thirteen of the qualitative studies were of good or excellent quality in terms of their value. Two were considered moderate because of difficulties ascertaining their consideration of transferability of findings and identification of further research goals (34,38). Another was less clear again and rated poor (36). One was rated very poor for additionally lacking any discussion about contribution to policy and practice (42). Of the quantitative papers, Lundh et al. (2016) had limited statistically significant findings, so results were not particularly supportive of the utility of the novel questionnaire to predict smoking cessation in COPD patients. However, its limited utility could be due to poor categorisation of intentions to quit, and lack of control over interventions the patients were offered during the study period etc. Bjarnason et al. (2010) showed clear results, but lacked reference to smoking status in follow up of survival; their creation of a motivation measuring tool was not tested for any predictive power. No attitudes were included in any calculations. Results from Hilberink et al. (2006) were clear but missing the markers for p values. Meaningful suggestions were made from the data; however, inferences were limited by the arbitrary classification of contemplation levels, but a much larger sample size improved the credibility of the findings.

Funding and Conflicts of Interest

Declaration of funding and potential conflicts of interest (COI), which may bias findings, was judged the weakest area for the qualitative papers examined. With a mean score of 45%, they rated overall as poor quality. Only four papers were rated excellent giving full clear accounts with no conflicts of interest (26,29,32,39), with a fifth, (37), declaring grants from pharmaceuticals companies to support the programme from which participants were drawn, but stating no involvement with the paper, and the decision was to rate them as having a moderate influence. Conversely three papers were rated as very poor for not declaring any information about funding or COI (28,42,43). The nine remaining studies were rated as poor due to not making any statements about COI, but providing acknowledgement of funding. Of the quantitative studies, two were poorer quality and at risk of bias due to one author receiving grants and consulting fees (25) from pharmaceutical companies that develop cessation products and another not declaring any COIs but declaring funding from such companies (40).

Synthesis of Findings

Fifty-two category codes were recorded two-hundred and thirty-seven times across the twenty papers and grouped into sixteen sub-themes, which in turn were placed into seven themes. Due to repeated citing of studies, the numeric code is used to identify papers. Theme and sub-theme source reliability were calculated as an average based upon the reliability of the contributing papers. All themes and sub-themes were calculated to be of good quality, excepting 6.2 which was rated as excellent see Appendix G. An overview of themes and subthemes is shown in Figure 1.

Theme 1: Conflicting relationships in smoking

This theme spanned 19 papers and accounted for 17.64% of the coded data. The theme has a quality rating of 82.1% based upon the mean of the qualities of papers containing the coded data. It covered contradictory positions people took in relation to others about their smoking and COPD. Most commonly reported were feelings of being blamed by health professionals and the social function served by smoking. The phenomenon is grouped into two sub-themes, with one about shifting responsibility (in varying and contradictory ways) to other people for being unable to stop. The other has less of sense of blame associated and is more about social identity as a smoker.

1.1 Blaming Others

This subtheme contained the most coded data (12.61%); seventeen papers (26–28,30,32–38,40–42,44) demonstrated results that would place some, or all, of the responsibility for continuing to smoke onto others, either directly or indirectly. Of those papers, twelve (26–28,30–33,35–38,44) reported some form of indignation with health professionals (mostly doctors) as a barrier to smoking cessation, perceived as a lack of empathy or being blamed for their disease. For example, feeling told what to do (37), experiences of contempt "well what did you expect [from smoking]?" (27), feeling criticised and like "a villain" by doctors (28). The experience of nagging by professionals was also viewed as negative by some participants who were aware of the dangers but that it had no effect on them (26,36). Conversely, six papers (26,30,34,37–39) also reported a desire to be (or the effectiveness of being) told directly. For example, wanting a "slap in the face… you will die" statement about their smoking (26), being told "if you keep on smoking, don't bother coming back to see me" (37), as well as being told how little lung function they had left being said at the right time (34) were reported in a positive way. A seventh paper could not to be coded for this sub-theme (43), despite evidence that participants wanted health professionals to be honest with them, it could not be discerned if this was about smoking. Six papers (27,28,32,34,41,42) also reported people felt unsupported to quit smoking in terms of help available. Participants reported not (or deny) being given any information about quit programmes or strategies (32,34), or feeling used by public media campaigns about illness to deter other smokers (27), that they are treated unfairly compared to drug-addicts and alcoholics who get access to rehabilitation (42), and that loved ones are unsupportive (28). Six papers (26,28,32–34,40) also reported laying some of the blame for their smoking and/or disease on a lack of support by others (not medical professionals). Poignant examples included identifying their partner restarting smoking as the problem (34), or insisting they should stop simultaneously (28), or making plans as a family group to quit and letting them slip (26). These views all appeared to absolve the self of responsibility in facing up to quitting.

1.2 Smoking as Relating

Eight papers (29,32,36,38–40,42,43) contained relational aspects of smoking that were less conflictual with others. Baring one paper (43), results identified peer reinforcement and the social aspect of smoking as an important part in its maintenance within sufferers of COPD. Three papers (39,42,43) contained results

which attested to smoking being part of the sufferers' identity, with one participant describing smoking as "the only normal thing left" about them since being diagnosed and treated for COPD. Two papers (32,36) contained descriptions where smokers expressed, or projected, their concern onto others, almost dissociating their needs and self-responsibilities, worrying how their smoking influences those around them.

Theme 2: Conflicting ideas about the relationship between COPD and smoking

This theme captured results which represent differing, sometimes contradictory, viewpoints on the relationship between smoking tobacco products and illness. Some papers, but not all, reported results that would indicate people both down-played the link between smoking and COPD, as well as stating that another factor or source could be responsible. Others contained results showing sufferers accept the relationship between their COPD and smoking. This theme spanned 16 papers and with an average quality of 80.8%, it contained the most coded data at 19.75%.

2.1 Down-Playing Links

Sixteen papers presented results that appeared to downplay the links between smoking and their COPD. Examples of this included sufferers stating they did not know the link between COPD and smoking (25,29,31,43), or denying there is a link at all (25,27,29,31,34,35,37,42,44). Sufferers also knew the links theoretically but did not feel threatened by them as evidenced by statements about knowing the benefits of cessation (26,29,33,34,36,38,43,44). One paper reported a participant describing smoking as "just an irritant" (30).

2.2 Outsourcing Causes

Ten papers presented results which evidenced COPD sufferers locate the cause of their disease either partially, or fully, in factors outside of smoking and/or their responsibility (25,27,30,31,33–35,37,42,44). Most frequent was assigning the cause to industrial dust or paint fumes, or even to another illness such as asthma (27,30,31,33–35,37,44). In some of these papers participants' COPD was normalised as a part of aging, or just bad luck, based on not all smokers developing COPD (30,33,34,42). In slightly tangential way, others absolved themselves by stating no-one knew the links when they started and that it was not fair or their fault

they had developed COPD (25,30,37,44). One paper contained accounts of COPD being described as an inherited condition (33).

2.3 Acceptance of the Relationship

Acceptance of the relationship between smoking and COPD by sufferers who continued to smoke was evident in seven papers (26,30–34,42). This included statements about not wanting sympathy, and COPD being the price they are paying for their smoking (33,34).

Theme 3: Conflicting views on control in smoking

Papers reported, in varied ways, results that appeared to encapsulate how people saw their relationship with smoking in terms of the control they had over the habit. These were categorised as opposing sub-themes in that some referred to smoking as a choice (and in some cases a defiance) whereas other accounts referred to addiction, habit and alluded to a range of difficulties in stopping, suggesting that smoking may be beyond choice and out of their control. Some papers included both, so sub-themes were not mutually exclusive. Quality was calculated to be 82.0% and the theme encompassed 19.33% of the coded data.

3.1 My Choice

Results that evidenced sufferers' idea of choice around smoking were found in thirteen papers. The most common code was that of enjoyment and desire of smoking and/or a sense of not regretting this enjoyment in nine papers (25,26,29,31,32,34,35,38,40). A view of the need for ownership of the decision to smoke, or not smoke, was apparent in the results of six papers (26,31,32,36,37,39). A sense of defiance or rebellion, almost asserting the sufferers' sense of choice and it being their own business was identified in five papers (26,27,31,32,35).

3.2 Out of my Control

Thirteen papers contained results that appeared to represent COPD sufferer's lack of control around their smoking, with something else either causing them to smoke, or not be able to quit. In all thirteen, there were references to addiction, habit, cravings or withdrawal effects which inhibit smoking cessation (26,27,39,43,44,29–31,34–38). Six papers contained results suggesting that life events (such as

bereavements) meant that it was never the right time to stop smoking (26,30,34,36,38,39). Four papers cited environmental triggers to smoking, such as coming home from hospital, or drinking alcohol, which would cue smoking (26,35,37,39). Participants in two studies expressed a need for some form of extreme or imaginary solution, namely being "lobotomised" or needing to have a "switch flipped" in their head (26,31). In one study a participant expressed a wish for smoking to be banned for them to give up (39).

Theme 4: Damaging ways of treating the self

Fifteen papers contained results that encapsulated difficulties that were negatively emotional in nature or involved some form of behavioural adaptation around smoking. These were grouped under the theme 'damaging ways of treating the self'. Quality was calculated as 81.9% and it accounted for 10.5% of the findings.

4.1 Critical-Self

Thirteen papers were identified as containing results that related to a self-critical state. Twelve papers reported difficult emotional states from smoking which appeared to impede COPD sufferers' thoughts and attempts to quit smoking, these states and processes were described in terms of guilt, shame, embarrassment, self-blame, anger, self-criticism and referring to the self as a failure (25,27,43,44,28,32,33,35–37,41,42). Three papers contained results where sufferers had referred to themselves as lacking will-power or lacking self-discipline to be able to overcome smoking (31,32,35), which was interpreted as having a critical or stern tone towards oneself.

4.2 Avoidance Strategies

Changes in the way sufferers' act or behave, or indeed the way they believe they must, were identified in eight papers. In six papers, results suggested that sufferers hid the fact they smoked from other people, denied smoking to others or avoided talking about smoking altogether (27,28,30,34,35,41). Three papers contained results that suggested some sufferers will avoiding seeing doctors or other health professionals due to their continued smoking (27,28,32). One study described participants as adapting their lives around worsening symptoms to possibly avoid the effect of, or not take seriously, the smoking related continuing damage (36).

Theme 5: Pessimism about change

Pessimism about change spanned fourteen papers, accounting for 12.18% of the findings and had a quality rating of 82.0%. It described the reasoning behind not quitting in terms of anticipated negative outcomes, as well as describing unalterable or irreconcilable phenomena.

5.1 Perceived Threats from Stopping Smoking

Results showed people with COPD feared the consequences of giving up smoking (26,28–30,32–36,42). There was evidence that sufferers worried how their bodies would cope, or that it would cause them harm (28,30), with some believing that quitting would worsen their COPD (33), or that they had seen others quit and then just die (29). Five papers reported results that cigarettes are friends to smokers with COPD and implied that quitting risks a loneliness (26,32,35,36,42), with a sixth paper talking about the anticipated loss and mourning that might be suffered with quitting (34). Other views contained concerns about side-effects (such as dizziness) and costs of pharmacological aids to smoking cessation (26,30,36).

5.2 Resignation

Six papers contained results that suggested people thought themselves too old or it was too late for them to stop as the damage had been done (28,32,36,39,40,44), and perception of there being no benefits from cessation was identified in four (28,29,40,41). Four papers reported people being unable to stop thinking about smoking, or very anxious when doing so, which made them smoke more (28,35,36,41). Two papers reported people feeling hopeless about their smoking (28,36).

Theme 6: Mitigating and optimistic approaches to smoking

This theme captured actions and viewpoints that could described as substitutional, deferring, falsely reassuring, or compensatory which somehow permitted the sufferers to continue to smoke perhaps with a lower sense of risk, or with a way out if things got worse. Twelve papers were noted to contain results that fitted with this theme, which covered 7.14% of the coded data and was quality-rated at 82.8%.

6.1 Compensatory Strategies

Nine papers contained results that indicated people were inhaling less smoke, cutting down to less cigarettes generally, or smoking less when their COPD was worse (26,28–30,32,35,38,41,42). It would appear these were considered as ways to compromise or minimise damage, with a couple of papers demonstrating people believed there was a safe lower-level of smoking (29,30), intermittent quitting with one-off cigarettes being permitted leading to relapses (35), or as a way of reducing harm and preparing themselves to quit one day (30,41). Two studies suggested a *squaring-it-away-with-yourself* process, with one reporting that medics had treated their prior throat cancer successfully, so they will be able to with the COPD (37). The other reported any positive news about lung health being taken as permission to keep smoking as though they were not ill (36). Two other studies reported people buying nicotine replacements, but not using them or letting them expire, perhaps as a way of trying to feel better/that they are doing at least something/preparing towards quitting (28,35).

6.2 Imagined Efficacy

Three studies contained descriptions that could be classed as ways of deferring or easing the health threat by imagining being able to change things, such as planning a future date to quit instead of attempting it now, or stating that one could quit if they really wanted to (26,28,31). A fourth study had an example of someone imagining how helpful their doctor would be should they ever want to quit (32). It should be noted this was the only subtheme to exceed the 90% quality threshold (all others were low to mid 80s).

Theme 7: Conflicting advantages of not quitting

Smoking was described positively in several, sometimes contradictory, ways across twelve papers with 13.45% of codes falling into this theme. Some results showed that smokers found that smoking calmed them down, whilst others described experiences of smoking as a stimulant. Some also found that the smoking assisted their body and its functions in other ways. The quality of this theme was calculated as 83.4%

7.1 Calms and Soothes

Smoking was described as having a calming and soothing effect. Six papers (28–30,35,36,39) referred to smoking as a way to relax and take a break, and for preventing irritability. Six papers (28–30,35,36,42) also described smoking as alleviating COPD sufferers' anxiety. Four (29,31,35,39) had results that indicated participants believed that smoking prevented low moods, or even feelings of "wasting away".

7.2 Stimulation

Conversely, smoking was also described as a stimulant. Five papers (32,35,36,39,40) reported results about sufferers having too much time on their hands if they quit smoking, and how their smoking alleviates boredom. Another paper also reported sufferers as stating that smoking both stimulates them and helps them concentrate (29).

7.3 Assists the Body

Smoking was attributed as helping sufferers with other aspects of their physical wellbeing. Six papers (26,29,31,36,38,39) reported sufferers as stating that smoking prevents weight gain and the associated hunger from quitting. In addition, another paper (30) found that some sufferers believed that smoking helped them to breathe and was a useful expectorant. One paper (29) reported sufferers as stating that smoking helped them digest their food, and to kills germs.

Reasons, attitudes, strategies and beliefs that maintain smoking in sufferers of COPD

Conflicting relationships in smoking
n = 19

Conflicting ideas about the relationship between COPD and smoking
n=16

Conflicting views on control in smoking
n=16

Damaging ways of treating the self
n=15

Pessimism about change
n=14

Mitigating and optimistic approaches to smoking
n=12

Conflicting advantages of not quitting
n=12

1.1 Blaming Others
n=17
• Lack of empathy from health professionals (n=12)
• Wanting shock tactics directly (n=6)
• Not offered the support (n=6)
• Others will not quit (n=6)

1.2 Smoking as Relating
n=8
• Smoking is part of socialising (n=7)
• Being a smoker is part of my identity (n=3)
• Projection of concern (n=2)

2.1 Down-Playing Links
n=16
• Denying the link (n=9)
• Knowing link but not feeling ill (n=8)
• Not knowing link (n=4)
• Smoking just an irritant (n=1)

2.2 Outsourcing Causes:
n=10
• Blaming industry, dust etc (n=8)
• Normalising COPD as age related / bad luck (n=4)
• Did not know the dangers when starting (n=4)
• Inherited condition (n=1)

2.3 Acceptance of the Relationship:
n=7
• Accepting the relationship (n=7)
• Paying the price (n=2)

3.1 My Choice
n=13
• Enjoying smoking (n=9)
• Having to be own decision to stop (n=6)
• My choice and my business (n=5)

3.2 Out Of My Control
n=13
• The power of the addiction / habit (n=13)
• Life Events (n=6)
• Environmental Cues (n=4)
• Need a magic solution (n=2)
• Wish it was banned (n=1)

4.1 Critical Self
n=13
• Self criticism leading to embarrassment, shame and guilt for smoking (n=12)
• Stating it's a lack of willpower/ self-discipline (n=3)

4.2 Avoidance Strategies
n=8
• Hiding / denying smoking (n=6)
• Avoiding doctors (n=4)
• Reducing activity to adapt to worsening symptoms (n=1)

5.1 Perceived Threats from Stopping
n=10
• Cigarettes are like friends (n=5)
• People who stop come to harm/die (n=4)
• Side effects of cessation medications (n=3)
• Loneliness and mourning the loss of smoking (n=1)

5.2 Resignation
n=7
• Too late damage is done/too old (n=6)
• No benefits to illness by stopping (n=4)
• Unstoppable thoughts of smoking lead to anxiety which means more smoking (n=4)
• Feeling hopeless (n=2)

6.1 Compensatory Strategies:
n=11
• Cutting down with future quit dates and/or inhaling less (n=9)
• Buying NRT repeatedly without using it (n=2)
• Doctors fixed it before they can again (n=1)
• Good medical results permission to smoke more (n=1)

6.2 Imagined Efficacy
n=4
• Could stop if really wanted to (n=3)
• Imagining GP would be very supportive (n=1)

7.1 Calms and Soothes
n=8
• Helps to relax, take a break and calm irritability/anxiety (n=6)
• Relieves anxiety (n=6)
• Relieves low mood (n=4)

7.2 Stimulation
n=6
• Alleviates boredom (n=5)
• Stimulates and helps to concentrate (n=1)

7.3 Assists the Body
n=7
• Prevents weight gain and reduces appetite (n=6)
• Expectorant and helps to breathe (n=1)
• Smoking kills germs and aids digestion (n=1)

Figure 1 Themes, subthemes and example codes (n=number of papers per theme, subtheme and code respectively)

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Discussion

Themes generated were rated good quality and being found across multiple papers mitigated any concerns regarding individual paper quality. No themes spanned only moderate quality papers which further adds to the confidence in the findings. The themes present a broad base of contradictory view-points that illustrate the diversity and breadth of attitudes that may be held by COPD sufferers regarding their smoking; this was supported by no single paper covering all subthemes. The large number of papers, the avoidance of search limiters and the worldwide coverage of the papers adds to the strengths of the review and its results. Findings suggest that no model to date has been close to capturing the broad attitudinal positions available to smokers with COPD.

Utility of Findings and Implications

Information yielded may be of use to those trying to motivate suffers to consider quitting smoking, particularly given the difficulties with MI to date (17). Equally, understanding the varied positions COPD sufferers take might help discern the factors needed to improve the current homogenously-effective, yet diverse, psychological approaches to cessation as highlighted by van Eerd et al. (2016). The results from this paper provide clinicians with a very broad framework of positions that clients might adopt, and given the apparent lack of satisfactory models available, would suggest idiosyncratic psychological formulation from a Clinical Psychologist could be useful for those struggling to quit smoking, especially where there are co-morbid difficulties with mood and anxiety.

Results suggest services need to provide accurate information (Theme 2), flexible approaches to offering treatment and support (Theme 3) and not be dogmatic in their approach (Theme 1). It might be important to collaboratively generate strategies to compensate for the perceived advantages of not quitting (Theme 7) whilst providing support, or psychological input to overcome difficulties, especially with problems seen in Themes 4, 5 and 6, with these encompassing a strong emotional thread. Particular consideration should be paid to all findings, especially Theme 1, when working with those who are not motivated to quit smoking (comparison to existing models and theories is continued in Appendix H and reflections on context are given in Appendix I).

Validity, Reliability and Limitations

This review utilised validated assessment tools for quality appraisal, and inter-rater reliability was satisfactory. However, questions over how robust any current appraisal tool is have been raised (45) which means that some flaws within studies may have been overlooked. Themes, sub-themes, and even codes, appear in places to overlap conceptually. Whilst attempts have been made to distinguish codes and themes, this review is limited in that it cannot test the correlation between these statements. Relationships should be tested in the form of a questionnaire and factor analysis, or Q-methodology sort to establish how-related the codes are to one another, and thus calculate their validity and reliability.

This review was not able to ascertain emotional states across the papers, nor the quitting motivation or intentions as most papers did not report this information, so it is impossible to state if any of the themes or sub-themes correlate with particular levels of motivation or emotional difficulties. Additionally, this review sought to name and count themes and sub-themes (and the codes that constitute the sub-themes) present in the literature, it did not attempt to quantify their frequency within each paper as this was often not possible. So, for example whilst it may appear that "downplaying the links" is more evident than "acceptance" across papers, the same claim cannot be made within papers. Thus, variance in reasons for smoking is described as between, not within studies.

It is not possible to know if saturation of reasons has been reached, as the review is limited by its papers. There are other denial beliefs in the literature, for example that smoking lighter cigarettes mitigates the damage (9), that did not appear here. Additionally, ethnicity was only mentioned by one paper (29) and despite broad geographic area covered, all were studied in developed countries. One cannot be sure that all perspectives on smoking, and its relationship to COPD have been captured (46).

Whilst attempts to bracket existing knowledge and theories were made and an inductive approach taken, the author of the review has a background in CBT and Health Psychology, which may have influenced the themes generated. Attempts were made to mitigate this by bracketing components of existing models. The lack of obvious fit with the TPB (see Appendix H) would suggest that this approach was somewhat successful.

Recommendations and Conclusion

There appear to be no existing satisfactory accounts or models that capture the broad viewpoints adopted by smokers with COPD. Findings suggest there may not be a simple rational relationship between particular thoughts and motivation, intention or actual quit attempts in COPD sufferers. This review demonstrates there is evidence of a multitude of contradictory positions people with COPD may take to justify continued smoking.

What is not clear is how these positions and viewpoints relate to one another, how they are used and deployed. There is also a dearth in the understanding as to how these viewpoints correlate (if at all) with degree of desire to quit and with depression and anxiety disorders; further research is needed to ascertain this information.

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Appendix A – Figures of Existing Models
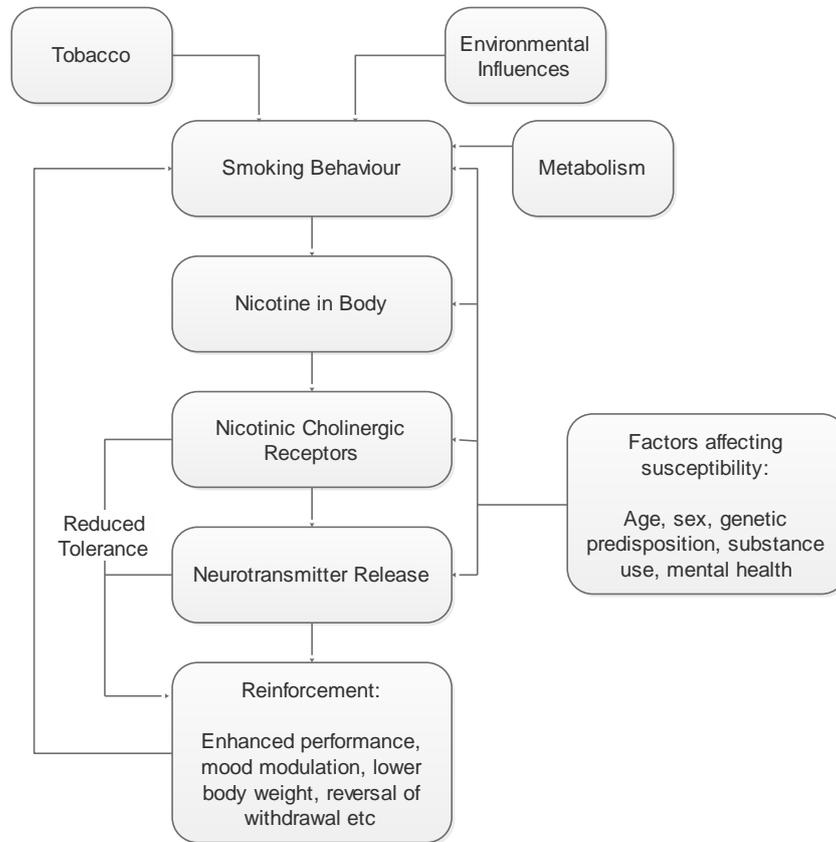
Figure 2 Neurobiological addiction model adapted from Benowitz (2010).
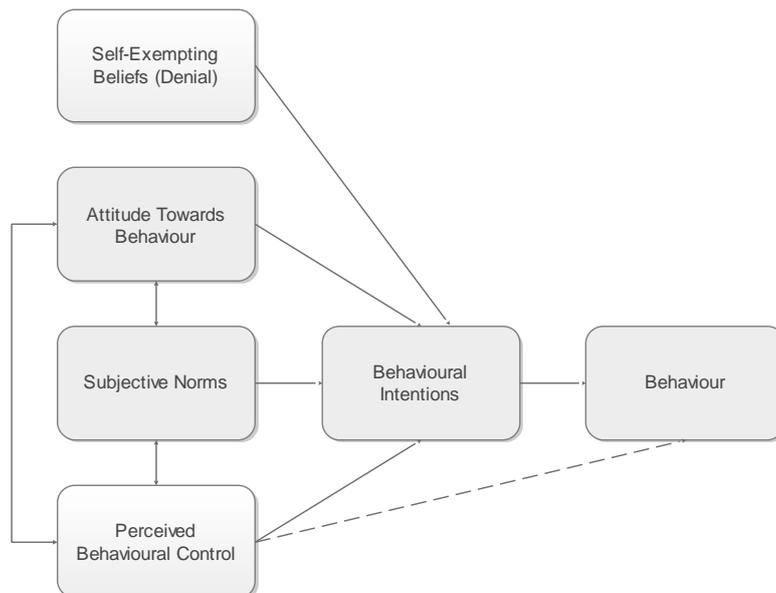
Figure 3 Expanded TPB model (adapted from Peretti-Watel, Halfen & Grémy, 2007)
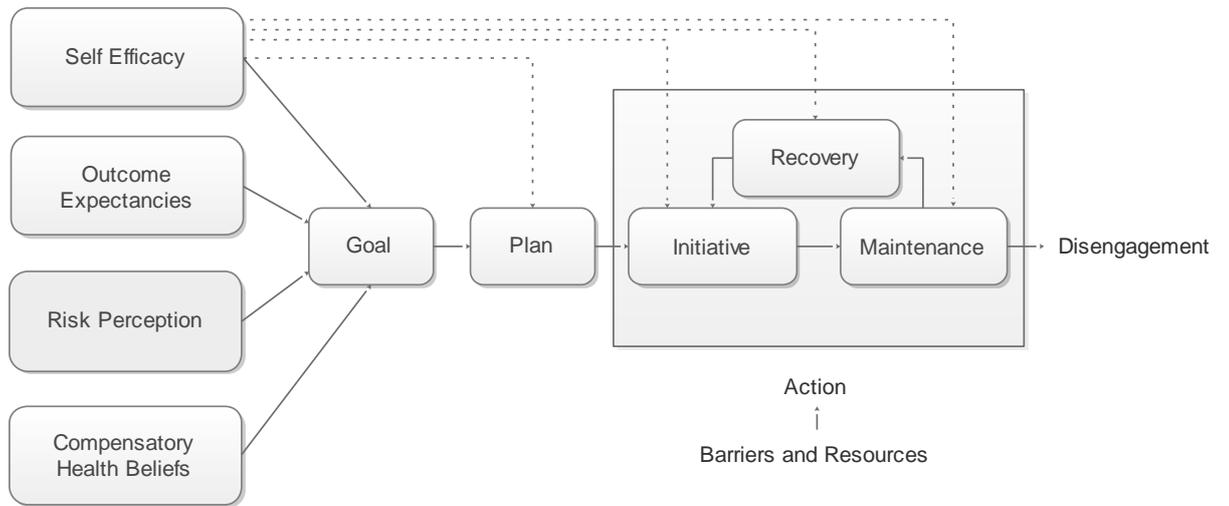
Figure 4 Expanded HAPA model (adapted from Radtke, Scholz, Keller & Hornung, 2012)
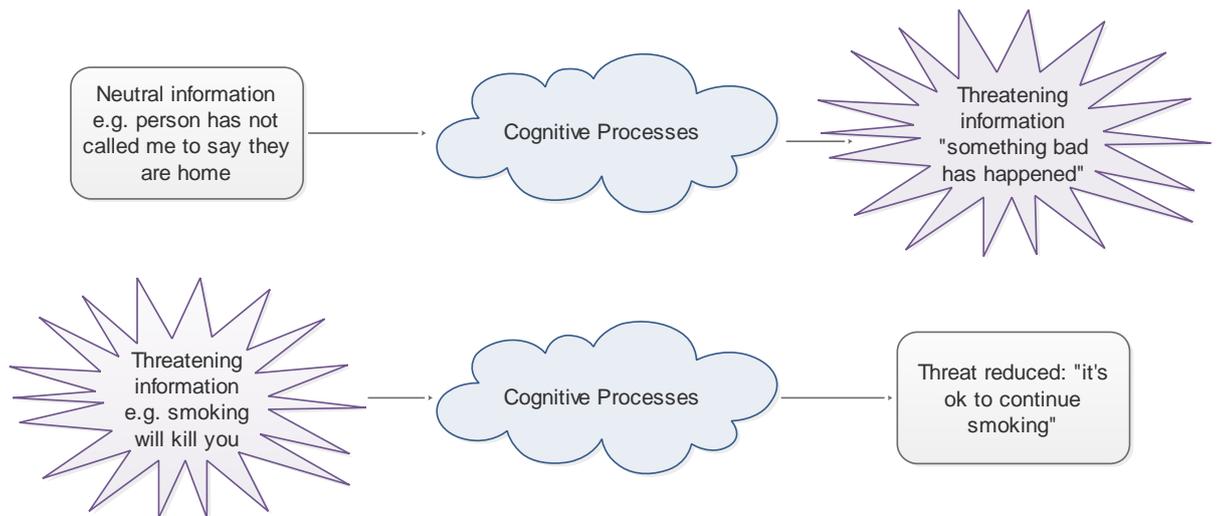
Figure 5 CBT anxiety information processing procedure vs hypothetical reversed process for smoking in COPD
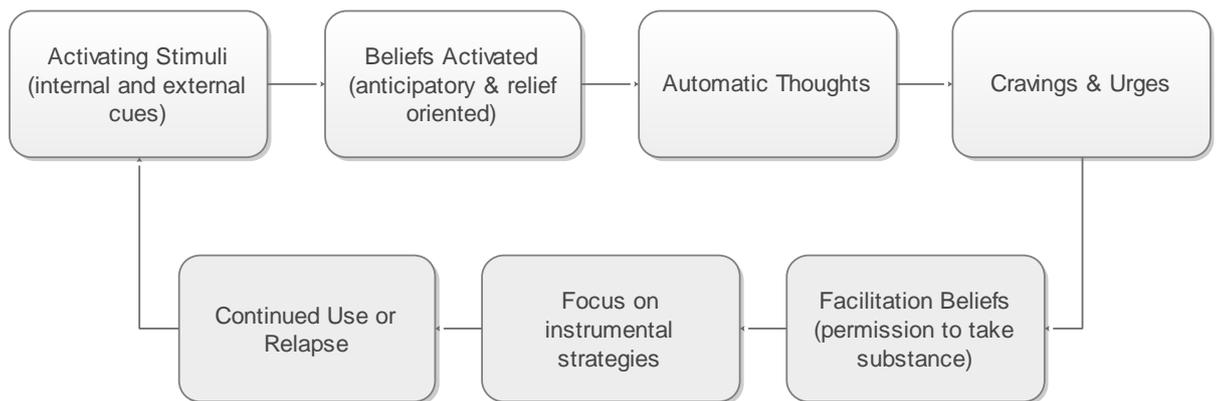
Figure 6 CBT model of addictions, Beck, Wright, Newman and Liese (1993)

Appendix B – Search Terms and Diagram

Details of search strings utilised including any limiters

Source	Search String	Limiters
HDAS (NHS Library)	((((Attitude* OR Belie* OR Reason* OR Motivat* OR Why OR Experienc*) AND Smok*) AND (Quit* OR Cessat* OR Continu* OR "Give up")) AND (COPD OR "Chronic Obstructive" OR Emphysema OR Bronchitis)).ti,ab	Title/Abstract
Web of Science	(((((Attitude* OR Belie* OR Reason* OR Motivat* OR Why OR Experienc*) AND Smok*) AND (Quit* OR Cessat* OR Continu* OR "Give up")) AND (COPD OR "Chronic Obstructive" OR Emphysema OR Bronchitis)).)	Topic
EThOS	COPD Smoking	None

Search Terms:

Attitude, Belief, Reason, Motivation, Why, Experiences, Smoking, Quit, Cessation, Continuing, Give up, COPD, Chronic Obstructive, Emphysema, Bronchitis

NHS Library
(AMED, BNI, CINAHL, EMBASE, HBE, HMIC, MEDLINE, PsycINFO, PubMed)
1,075 results

Web of Science

342 results

EThOS

76 results

Duplicates removed:

603 results

Screened from reading title and abstract

890 results

Do not meet inclusion criteria:

852 results

Not relevant, not journal article, only contain physiological or pharmacological measures/predictors of smoking cessation

Full Text Articles Accessed

38 results

Do not meet inclusion criteria:

21 results

Not views about why people cannot stop = 12
Cannot distinguish COPD results from others = 5
Study of Intervention = 3
Non-systematic review = 1

Total Articles Selected for Review

20 results

BNI = 2
EMBASE = 2
Medline = 2
PsycINFO = 7
WoS = 4
Hand Search = 3

Hand Search
(reference lists)
3 results

Figure 7 Search Strategy and Results

Appendix C – Data Synthesis Principles

It is recognised there are no universal definitions of what data is for the purposes of extraction and synthesis of qualitative findings. Data extraction followed the principles that only data relevant to the research question (i.e. findings that attempt to explain why, and how, people with COPD continue to smoke) was collected for synthesis (22). Some papers contained a lot relevant data about why people continue to smoke (those tended to be the detailed studies that enquired qualitatively and specifically about experiences of relationships to smoking, and those specifically about not being able to give up) whereas others contained less as they were only small part of the study (those that examined more general life with COPD or smoking cessation experiences) or were fixed constructs being measured (i.e. the broader quantitative studies that examined motivation/attitudes to quitting) – this trend is illustrated by comparing Table 4 to the results section. Additionally, to be considered for synthesis the qualitative data extracted had to follow three principles from Sandelowski and Barroso (2002).

Extracted qualitative data therefore met the following criteria:

   i)   Data that attests to why or how a person with COPD does not/struggles to give up smoking.
   ii)   Data is evidenced by quotations that fitted with the interpretation either with direct quotations, or clearly based upon quotations, statements or numbers of participants stating something.
   iii)   Is not simply quotes with absolutely no interpretation or context, nor conversely lengthy interpretations without quotes in the discussion section of a paper.
   iv)   Interpretations must reflect the content of quotes.

To synthesise the extracted data, and to account for different methodologies used, thematic analysis (24) was undertaken. It is impossible to bracket all previous understanding, but the lack of validated cognitive models for COPD from which to use as a framework permitted a less theory driven approach to deductive coding. Additionally, using an existing model would have risked not coding phenomena that may not appear as straightforward beliefs, e.g. description of a behaviour.

Papers were read and re-read for findings which were extracted into Microsoft Excel, codes were created for findings that met the criteria. The codes were then analysed and drawn into themes which captured the type of description, process, belief or attitude that was being described. Quotes were extracted from the papers and checked against these themes to ensure they were captured under these themes.

Quantitative papers measured different variables and therefore meta-analysis was not possible. Data extraction from quantitative papers involved interrogating the results for findings that may explain why people do not give up smoking with COPD. For the fact that data within the papers were, by and large, relative differences between smokers with COPD rather than absolute reasons why people do not quit, data that stood out as differences or reason (and where applicable, statistically significant at <0.05) were extracted for this thematic analysis.

Themes were created that structured the data to show contrasting positions on similar subjects, thus highlighting broad aberrant and contradictory viewpoints, rather than on frequency of codes which may have led to theoretical profiles of smokers with COPD.

Appendix D – Literature Search Results

Table 1 Literature Search Results Overview

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
1	Burrows & Carlisle (2010)	Investigate how to improve effectiveness of smoking cessation communication England	Grounded Theory Semi-structured Interviews N=10	Smokers deny the contribution of their smoking to COPD. A low level of acknowledgement of the association between smoking and COPD was found in long-term COPD sufferer. Health and finances were biggest motivators for cessation of smoking. Over directive and ritualistic approaches by health professionals was found to be counter-productive. Smokers avoided health care for reasons of embarrassment and fear of discrimination.	+ Purposive sampling described well and balanced + Acknowledgement of potential hindsight bias of respondents whom had quit + Triangulation of researchers + Recognised limits of results and potential non-saturation	- Little time between consent and interview - Paucity of reflection on authors' bias in analysis beyond the method - Lack of discussion of ethics beyond approval - No verification of findings with participants
2	Eklund, Nilsson, Hedman, & Lindberg (2012)	Find out why do smokers with COPD not quit. Sweden	Content Analysis Semi-structured Interviews N=10	Smokers' lives were dictated by a lifelong habit that was hard to break despite knowing the harmful effects and consequences of COPD. Life events were reasons for not finding the right time to quit smoking. Demands to quit smoking from other people were experienced as patronising and would lead to continued smoking or relapse. Support was desired from relatives and health services but participants wanted ownership to make the decision to quit.	+ Clear methodology for collection/analysis of data + Selected the first 10 which reduced researcher selection bias + Some consideration as to the location of interviews + Ethical approval + Joint coding + Acknowledgement of some limitations	- Some contradictory findings not recognised in interpreting data - No evidence of reflections on own biases when coding - Unclear as to why GOLD II criteria, not explained. - Some quotes are difficult to read in English

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
3	Gullick & Stainton (2006) Australia	Explore the embodied experience of smoking addiction in COPD	Hermeneutic Interpretation Two semi-structured interviews N=15	COPD sufferers experienced smoking as a need of their "taken-for-granted body", as an intense enjoyment, in response to triggers perceived by the automatic body long after smoking cessation. Sufferers and their families described a link between heavy smoking and exacerbations of breathlessness leading to tension between smoking and awareness of smoking-related illness. Not getting over the body's addiction could lead to denial of the relationship between the need to smoke and worsening breathlessness. Smoking can lead to family anger, mediated by family member's own experience of addiction.	+ Rich descriptions of embodied experiences and automatic impulses even in ex-smokers + Includes family perspective + Thick descriptions of the moments when people change their minds about smoking	- No mention of ethics - No mention of invitation and response rates - Few details on inclusion/ exclusion criteria - Cannot tell the level of reflection on influence of bias ideas on analysis or discussion on analysis process as no detail on triangulation, reflection, and bias - No validation from participants
4	Halding, Heggdal, & Wahl (2011) Norway	Explore experiences of self-blame and stigmatisation for self-infliction of COPD	Content Analysis Two thematic interviews N=18	Master theme of "feeling of being exiled in the world of the healthy", due to stigmatisation by society of COPD as a self-inflicted disease, and through self-blaming. Feelings of disgrace through subtle blaming. Lack of support from social networks, health professionals and society. This led to greater strain from COPD and a defensive stance.	+ Longitudinal. Good focus and acknowledgement of power relations in interviewing + Detailed description of rigorous analysis + Invitation numbers given + Large sample size for qualitative study + Feedback obtained from participants + Acknowledgement of limitations	- Clinicians (instead of researchers) recruited and obtained consent which may be a power relation issue. - Convenience sample from small group who had recently had PR which may have skewed viewpoints elicited - Unclear why took 2 years to collect data and further 6 years to publish - Interview schedule not listed

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
5	Hansen, Walters, & Wood Baker (2007)	Find out how COPD sufferers explain why they developed the disease, and the role of cigarette smoking in their explanatory accounts Australia	Custom (based on GT and narrative) Semi-structured Interviews N=19	N=15 expressed scepticism about medical links between COPD and cigarette smoking, and some doubted whether it was COPD at all. N=4 described smoking as the principal reason why they had breathing problems. Majority gave multiple-causes often with emphasis on explanations such as a familial tendency to respiratory illness or workplace exposure to pollution.	+ Recruited purposively with balancing until saturation + Second interview allowed participants to comment on analysis + Consideration about power relations: not imposing diagnostic label during interviews + Detailed demographics + Acceptance and refusal numbers provided + Large sample size for qualitative study	- Does not state why 46 declined to take part - Homogenous sample in some respects (socio-economic status, all retired) - No information on why 8 did not take part in second interview - No mention of ethics, consent or withdrawal
6	Jones, Hyland, Hanney, & Erwin (2004)	Examining perceptions of factors that influence compliance with COPD treatment England	Thematic Analysis Focus Groups N=29	N=28 reported good compliance with medication but some expressed concerns about techniques. N=29 reported being instructed to stop smoking, but varied in beliefs that smoking was harmful/not. Some quit, some cut down and others continued, but a lack of constructive help to quit was stated. Participants were told to exercise but were unsure why/how much/if breathlessness was dangerous due to lack of info. Reported being given minimal advice about diet.	+ Attrition rates stated + Reasons for attrition given + Very clear inclusion/ exclusion criteria	- Appears to be a deductive thematic analysis, but not described as such and lacks detail on analysis process - No mention of ethics anywhere - No reflections on effects of process on participants or validation from them

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
7	Jonsdottir & Jonsdottir (2007)	Understand the experience of women with advanced chronic obstructive pulmonary disease of repeatedly relapsing to smoking Iceland	Interpretative Phenomenology Semi-structured Interviews N=7	Six themes generated: "being caught in a spider web", "circumstances of the relapses", "shame", "the excuse", "ambivalence" and "incomplete attempts to quit". It was found that participants had limited ability to abstain from smoking and they oscillated desiring to quit and not.	+ Rich descriptions + Triangulation by second author in analysis + Validation by presenting first interview interpretation at second interview + Ethical approval obtained	- Unclear on what counts as relapse for inclusion criteria - Shortage of quotes at times to justify some of the stated data - Clinicians (instead of researchers) recruited and obtained consent which may be a power relation issue. - Discussion is quite laboured yet does not many implications for practice
8	Lefcoe, Pederson, & Blennerhassett (1988)	Understand attitudes of people with COPD towards smoking cessation Canada	Categorical/Content Analysis Interviews N=40	Decisions to attempt quitting related to health consequences. Firm persistent doctors viewed as the most important and credible source of advice' around cessation. Firm continuing pressure, from doctor and then family and friends, was found to be strongest stimulus. Public media not seen as source of information and advice. The financial cost of smoker not an important consideration. First attempt to quit rarely successful, but persistence yielded success, but reasons why not were not found.	+ Sampling appears to be based upon physician attendance so has opportunity feel to it reducing researcher selection bias + Large sample size + Considers the non-generalisability of findings + Consideration of power-relations and settings.	- No explanation of why methodology chosen - No explanation of interview method or analysis - No mention of ethics - Non-health attenders not sampled - Not clear on inclusion criteria - other than smoking level - No validation from participants
9	Lindqvist & Hallberg (2010)	Examine the main concerns of people with COPD and how everyday life is handled. Sweden	Grounded Theory Semi-structured Interviews N=23	Theoretical model showed COPD sufferers' primary concerns were guilt about self-infliction of the disease due to smoking habits. There were five strategies identified in the model "making sense of existence", "adjusting to bodily restrictions", "surrendering to fate", "making excuses for the smoking-related cause" and "compliance with daily medication".	+ Large sample size for qualitative study + Saturation discussed and obtained + Critical reflexivity evident within the analysis + Good consideration of ethical factors	- Sparse description of recruitment process. - No information on numbers who declined - Not much in the way of critical discussion of their findings

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
10	Lundh, Hylander, & Törnkvist (2012)	Explore why some people with COPD struggle to quit smoking and develop a theoretical model that describes perspectives on these difficulties. Sweden	Grounded Theory Semi-structured Interviews N=14	Theoretical model of 'Patients with COPD trying to quit smoking'. Factors related to decisions to try to quit smoking, included "pressure-filled mental states" and "constructive" or "destructive pressure relief strategies". "Constructive strategies" led to success in quitting or continuing attempts to quit. "Destructive strategies" led to the loss of hope and resignation to continued smoking.	+ Model presented to four participants for validation + Thorough description of analysis including theoretical sampling + Clear presentation of model + Critically reflexive of the model and its situatedness	- No info if any declined to be interviewed. - No mention of saturation - Lack of quotes on understanding of relationship of COPD to smoking - 'Destructive' is author's term not participant; the participant review highlighted that people use both types of methods interchangeably
11	Nykvist, Larsson, & Dahlborg Lyckhage (2014)	To describe how a group of female smokers with COPD experienced everyday life and relationships to smoking. Sweden	Narrative Approach Narrative Interviews N=6	The analysis led to a narrative about "a woman with COPD that knows what she must do but cannot find the power within herself to take action. She talks about herself like a young bird that is going fly for the first time."	+ Detailed ethical considerations + Detailed account of analysis which appears rigorous and credible + Acknowledgement potential of biases in discussion	- Do not state how many were invited/responded - No validation from participants despite narrative approach - Lack of demographic information

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
12	Poureslami, Shum, & FitzGerald (2015)	To compare the smoking habits and beliefs of Chinese smokers and quitters after a diagnosis of COPD Canada	Content Analysis Semi-structured Interviews N=91	Differences in smoking experience, social influences, addiction/habit, and advantages and disadvantages of smoking were identified. Differences were found in terms of beliefs that smoking helps relaxation, reduces COPD related anxiety/stress, and is a psychological habit that cannot be easily overcome. Barriers to successful smoking cessation included weight gain, dizziness, depression, and mood changes.	+ Very large sample size for qualitative study + Broad range of practitioners/services involved in recruitment + Community based participatory research meant Service-users involved in design + Acknowledge the localisation of results + Ethical approval	- Lack of clarity about how pilot tool relates to interview structure - At points, unclear on differences between groups (smoke/ex) in results - Not clear if those involved in design were recruited? -No clear evidence of reflections on bias -Not all themes and categories displayed in results table - poor layout - No validation from participants
13	Robinson (2005)	To describe the experiences of patients living with severe COPD dependent on supplementary oxygen England	Thematic Analysis (although not stated) Unstructured Interviews N=10	N=10 reported difficulties with physical and psychological problems, largely from breathing difficulties. N=8 described difficulties with family life because of their illness, and N=5 reported depression. N=10 discussed smoking, although not all blamed this for their disease and those that did recognise its role did not always change their behaviour. N= 5 stated the need for better communication between them and health professionals over their disease.	+ Random sampling from larger purposive sample reduces selection bias by researcher + Recognition of bias risks inherent in medical practitioner asking questions + Triangulation of analysis by random selection of two papers for third analyst + Validation of data from two randomly selected participants	- No referencing for analytic method/choice of approach - No discussion about the structure of interviews or why this was chosen - Little reflection on what the interviewer brought to the themes - Interpretation is difficult because discussion section is blended with results

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
14	Schofield, Kerr & Tolson (2007)	Explore the beliefs related to smoking in older people with COPD guided by the Health Beliefs Model Scotland	Thematic Analysis (secondary analysis and partly deductive by Health Belief Model) Semi-structured Interviews N=22	More than half of participants continued to smoke despite viewing smoking as a threat to their health. All smokers had attempted smoking cessation at some point and identified various barriers to quitting. More than half were still attempting to quit smoking. Externals sources provided cues to action rather than increasing COPD severity.	+ Recognises saturation from purposive sampling + Detailed demographics + Acknowledge weakness in applying model to previously collected data + Biases mitigated by design as Health Belief Model not used for original interview + Good consideration of ethical issues	- Do not state why only 22 of 28 interviews were used - Appear to have misinterpreted data at times. - Analytic method not clearly described - Authors state that it is novel for nurses to consider own beliefs but do not mention their own
15	van Eerd, Risør, van Rossem, van Schayck, & Kotz (2015)	To compare justifications for smoking, i.e. which are unique to COPD sufferers and which are shared with non-COPD smokers Netherlands	Thematic Analysis Semi-structured Interviews N=20	Three themes were identified: 'balancing the impact on health of smoking', 'challenging of autonomy by social interference', 'prerequisites for quitting'. All participants played-down the consequences of smoking to their health. COPD sufferers appeared less knowledgeable about health and smoking. Both COPD and non-COPD smokers described autonomy as very important. COPD sufferers perceived a lack of empathy from doctors and were indignant about it. They also had little faith in the efficacy of smoking cessation products. Motivation to quit smoking fluctuated, and for those with COPD their vision of life was connected to quitting.	+ Contradictory data highlighted (playing down health link vs vision of quitting) + Balanced purposive sample in terms of age, gender + Detailed description of the analytic process + Thoughtful about how interviewer was perceived + Ethical approval + Recognised own bias and stated, and acknowledge selection bias (those not interested may have differing views)	- A random sample could have been used as many people indicated willingness to participate - No validation from participants

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
16	Vuong, Hermiz, Razee, Richmond, & Zwar (2016)	To explore the smoking-cessation experiences of people with COPD in primary care Australia	Thematic Analysis (deductive using Behaviour Change Wheel framework) Semi-structured telephone interviews N=33	Three inter-related themes were identified: 'the motivation to quit smoking', 'opportunities to quit smoking' and 'capabilities to quit and maintain cessation'. The majority of attempts to quit occurred spontaneously and without explanation or planning; sometimes quitting attempts were motivated by family, peers or doctors. Web-based cessation programs led by health professionals were seen by participants as an opportunity to attempt to quit. Both ex-smokers and smokers attempted to quit multiple times. Current smokers struggled to maintain cessation attempts due to mood changes, boredom, irritability, sense of identity as a smoker, reinforcement by others, cravings for smoking, increased hunger and weight gain.	+ Thorough description of analytic process + Reflection on own knowledge + Data triangulated with other researchers + Acknowledge their deductive approach and left room for inductive coding + Ethical approval + Adjusted method for those who did not want to be recorded	- No reasons for non-participations sought - No validation from participants - Difficult in places to discern smokers' and ex-smokers' responses within themes
17	Wilson, Elborn, & Fitzsimons (2011)	To explore experiences of smokers with COPD unable to stop smoking with support and their decision-making processes Northern Ireland	Giorgi's Analysis Semi-structured interviews N=6	The study highlighted six themes that described the participants' decision-making regarding smoking with COPD; "too late to stop now", "finding motivation", "guilt about continued smoking", "bargaining and contemplation", "need to stop" and "reduced quality of life".	+ Balanced sample + Evidence of consideration of power relations to clients + Good balance of data and quotes + Clear description of interview and guide + Clear descriptions of contradictory data + Funding does not seem to be related to anything in study	- Not discussion around why the 6 participants were chosen, and why only 6. - No mention of saturation - No validation from participants - Analysis is rigorous but little reflection on pre-conceptions as they had been researchers in a prior RCT which contained interventions

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
18	Bjarnason, Mikkelsen, & Tønnesen (2010)	To understand beliefs about COPD, smoking and motivation to quit during acute exacerbation. Denmark	Factor Analysis, Linear Regression, and Kaplan-Meier survival analysis Cross-sectional Questionnaires with survival follow-up N=100	Just 16% of COPD sufferers thought smoking had caused their COPD, and only 24% thought that had they not smoked they would not suffer from COPD. Factor analysis showed three questions could be included in a scale to measure motivation to quit (alpha = 0.76). 30% of variance (r = 0.55, p = .005) of motivation scale score was explained by years smoking (negatively associated), daily cigarettes consumption (positively associated) and BMI (negatively associated). Mortality was lower than in the reference population (RR = 0.63, p = .005), but higher than in age-matched general population.	+ Included a reference group for survival analysis + Regression analysis of length of time smoked, number of cigarettes, BMI with motivation for quitting + Acknowledge selection bias and the more severe reference group + Controlled for other illnesses + Statistically tested one of their novel questionnaires	-Included a never-smoked group despite being about smoking with no rationale - Arbitrary and untested tools to measure attitudes and cessation motivation - Survival analysis but no checking on smoking status which would have added extra dimension to motivation questionnaire - No analysis of attitude data to cessation motivation
19	Hilberink, Jacobs, Schlosser, Grol, & Vries (2006)	To understand characteristics of COPD sufferers who smoke at different levels of motivation to quit smoking Netherlands	ANOVA, Kruskal-Wallis, Chi-square and Factor Analysis Cross-sectional Questionnaires N=633	Smokers categorised as pre-contemplative of quitting identified significantly fewer advantages of smoking cessation than those contemplating or preparing to quit. Those categorised as preparers had significantly higher self-efficacy expectations about quitting than other categories of smokers. Those preparing to quit reported suffering more COPD complaints than pre-contemplators. Contemplators and preparer categories had more plans to turn intentions to quit into action.	+ Large sample size + Broad geographic sampling + Some standardised scales + All Cronbach's alphas >0.7 + Sample distribution discussed in relation to non-responders + Good discussion on potential sampling bias	- Arbitrary and untested tool to measure and categorise contemplation - Missing p value markers in table - Limited details on statistical analyses - Funded by pharmaceutical company

Number	Author	Aims and Location	Method and Participants (N)	Summary of Results	Key Strengths	Key Weaknesses
20	Lundh, Alinaghizadeh, Törnkvist, Gilljam, & Galanti (2016)	Test the predictive validity of Time to Quit (TTQ) 14 item questionnaire on smoking cessation outcomes in COPD sufferers Sweden	Logistic Regression Cross-sectional Questionnaire with 3 month follow up (to ascertain quit status) N=94	Higher 19-item TTQ scores (but not the 14-item previously standardised version) were significantly related to a lower chance of attempting to quit smoking. Sufferers classified as not ready to quit had a lower probability of stopping with a high 19-item TTQ score (adjusted odds ratio (OR)=0.72; 95% confidence interval (CI)=0.53–0.99). Those ready to quit, had a lower probability of attempting to quit when scoring highly score on subscale 'pressure-filled mental states' (OR=0.78; 95% CI=0.66–0.94). The same subscale was significantly associated with higher chance of cutting down smoking by 50% in those not ready to quit (OR=1.32; 95% CI=1.05–1.66). Trend of greater ambivalence was associated with lower chance of quitting, 50% reduction or attempting to quit, but not statistically significant.	+ Broad sampling sites + Tested a novel questionnaire + Some support for the constructs of previous model + States no conflicts of interest, + No concerns about funding	- Arbitrary and untested tool to measure desire to quit - Complete lack of control over smoking interventions between measurements - Unclear *a priori* adjustments - Do not seem to acknowledge the potential for TTQ to be inadequate - Self reported cessation on follow up, not checked

Appendix E – CASP Sub-Questions and Raw Scores

Table 2 Details of the sub-questions within CASP Qualitative checklist.

	QUESTION	MEAN SUB QUESTION RAW SCORE
1	**Clear statement of aims?**	
2	**Qualitative appropriate methodology?**	
3	**Research design appropriate to aims?**	
	> Did Authors justify research design/discussed method used?	2.71
4	**Recruitment strategy appropriate?**	
	> Explained how participants were selected?	3.00
	> How the selected participants were most appropriate?	2.76
	> Are there discussions around recruitment (e.g. why some did not take part)?	1.40
5	**Data collected in way that addressed issue?**	
	> Setting justified?	2.12
	> Clear how data collected (interviews/groups etc)?	3.00
	> Have methods chosen been justified	2.53
	> Methods explicit (e.g. interviews is there a guide or description of how conducted)?	2.47
	> If methods changed, has this been explained why?	2.50
	> Form of data is clear (recordings, video, notes etc)?	2.82
	> Saturation of data discussed?	1.59
6	**Relationship researcher/participant considered?**	
	> Critically considered role in bias/influence formulation of research questions?	2.41
	> Critically considered role in bias/influence in data collection e.g. recruitment and location?	2.12
	> Response to events during the study and implications of changes to design?	2.50
7	**Ethical issues been considered?**	
	> Sufficient details of explanation to participants to assess whether ethical standards upheld?	1.88
	> Discussion of ethical issues raised (e.g. informed consent, confidentiality, after effects of study)?	2.00
	> Approval sought from ethics committee	2.47
8	**Data analysis sufficiently rigorous?**	
	> In depth discussion of analysis process?	2.65
	> Is it clear how themes/categories were derived from the data?	2.71
	> Explains how data presented were selected from sample to demonstrate analysis process?	2.71
	> Sufficient data presented to justify findings?	2.94
	> Are contradictory data taken into account?	2.82
	> Researcher critically examined own role for bias in selection and analysis of presented data?	1.59
9	**Clear statement of findings?**	
	> Are findings explicit?	2.88
	> Adequate discussion of evidence for/against researcher's argument?	2.71
	> Credibility (e.g. triangulation, respondent validation, multiple analysts?)	2.47
	> Findings discussed in relation to original research question?	2.94
10	**Is the research valuable?**	
	> Consideration of study as contribution to policy and practice?	2.88
	> Areas for further research identified?	2.24
	> Considered the transferability of findings to other populations?	2.06

Appendix F – AXIS and CASP Scores

Table 3 Axis Scores for Quantitative Papers

AXIS QUESTION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Study Number	First Author	Were the aims/objectives of the study clear?	Was the study design appropriate for the stated aim(s)?	Was the sample size justified?	Was the target/reference population clearly defined? (Is it clear who the research was about?)	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	Was the selection process likely to select participants that were representative of the target/reference population under investigation?	Were measures undertaken to address and categorise non-responders?	Were the risk factor and outcome variables measured appropriate to the aims of the study?	Were the risk factor and outcome variables measured correctly using instruments that had been trialled, piloted or published previously?	Is it clear what was used to determined statistical significance and/or precision estimates? (eg, p values, CIs)	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?	Were the basic data adequately described?	Does the response rate raise concerns about non-response bias?	If appropriate, was information about non-responders described?	Were the results internally consistent?	Were the results for the analyses described in the methods, presented?	Were the authors' discussions and conclusions justified by the results?	Were the limitations of the study discussed?	Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?	Was ethical approval or consent of participants attained?	Total Score out of 20	Total % Quality
18	Bjarnason	Y *3* 1.00	y *3* 1.00	C/T *1* 0.33	Y *3* 1.00	P *2* 0.67	Y *3* 1.00	C/T *1* 0.33	C/T *1* 0.33	P *2* 0.67	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	N *3* 1.00	C/T *1* 0.33	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	P *2* 0.67	Y *3* 1.00	**16.33**	**GOOD** **81.7%**
19	Hilberink	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	N *0* 0.00	Y *3* 1.00	P *2* 0.67	P *2* 0.67	P *2* 0.67	Y *3* 1.00	N *3* 1.00	Y *3* 1.00	Y *3* 1.00	P *2* 0.67	Y *3* 1.00	Y *3* 1.00	P *2* 0.67	Y *3* 1.00	**17.33**	**GOOD** **86.7%**
20	Lundh	Y *3* 1.00	Y *3* 1.00	N *0* 0.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	Y *3* 1.00	P *2* 0.67	P *2* 0.67	Y *3* 1.00	N *0* 0.00	Y *3* 1.00	N *3* 1.00	Y *3* 1.00	P *2* 0.67	Y *3* 1.00	P *2* 0.67	P *2* 0.67	N *3* 1.00	Y *3* 1.00	**16.33**	**GOOD** **81.7%**
Mean Score **Standard Deviation**		**1.00** **0.00**	**1.00** **0.00**	**0.44** **0.51**	**1.00** **0.00**	**0.89** **0.19**	**1.00** **0.00**	**0.44** **0.51**	**0.67** **0.33**	**0.67** **0.00**	**0.89** **0.19**	**0.56** **0.51**	**1.00** **0.00**	**1.00** **0.00**	**0.78** **0.38**	**0.89** **0.19**	**0.89** **0.19**	**0.89** **0.19**	**0.89** **0.19**	**0.78** **0.19**	**1.00** **0.00**	**Mean** **Std Dev**	**83.3%** **2.89%**

Y=Yes, P=Partially, C/T=Cannot tell but implied, N=No, N/A=Not applicable

Study Number	First Author	Clear statement of aims?	Qualitative appropriate methodology?	Research design appropriate to aims?	Recruitment strategy appropriate?	Data collected in way that addressed issue?	Relationship researcher/ participant considered?	Ethical issues been considered?	Data analysis sufficiently rigorous?	Clear statement of findings?	Is the research valuable?	Independent of other interests	Total Score (out of 11)	Total % Quality
1	Burrows	EXC	EXC	EXC	EXC	EXC	GOOD	GOOD	GOOD	EXC	EXC	MOD		EXCELLENT 91.6%
		3	3	3	9	19	8	7	15	12	9	2		
		1.00	1.00	1.00	1.00	0.90	0.89	0.78	0.83	1.00	1.00	0.67	10.07	
2	Eklund	EXC	EXC	EXC	GOOD	EXC	GOOD	EXC	EXC	EXC	EXC	EXC		EXCELLENT 95.2%
		3	3	3	7	18	5	9	17	11	9	3		
		1.00	1.00	1.00	0.78	1.00	0.83	1.00	0.94	0.92	1.00	1.00	10.47	
3	Gullick	EXC	EXC	EXC	MOD	MOD	POOR	V POOR	GOOD	GOOD	MOD	POOR		MODERATE 65.4%
		3	3	3	5	12	2	1	16	9	5	1		
		1.00	1.00	1.00	0.56	0.67	0.33	0.11	0.89	0.75	0.56	0.33	7.19	
4	Halding	EXC	EXC	EXC	EXC	EXC	GOOD	EXC	EXC	EXC	EXC	POOR		EXCELLENT 91.0%
		3	3	3	9	20	7	9	17	12	9	1		
		1.00	1.00	1.00	1.00	0.95	0.78	1.00	0.94	1.00	1.00	0.33	10.01	
5	Hansen	EXC	EXC	EXC	GOOD	GOOD	GOOD	V POOR	EXC	EXC	EXC	POOR		GOOD 81.6%
		3	3	3	8	17	7	2	17	12	9	1		
		1.00	1.00	1.00	0.89	0.81	0.78	0.22	0.94	1.00	1.00	0.33	8.98	
6	Jones	EXC	EXC	EXC	GOOD	GOOD	V POOR	V POOR	MOD	GOOD	GOOD	POOR		MODERATE 67.4%
		3	3	3	8	16	0	0	12	9	8	1		
		1.00	1.00	1.00	0.89	0.89	0.00	0.00	0.67	0.75	0.89	0.33	7.42	
7	Jonsdottir	EXC	EXC	EXC	MOD	GOOD	MOD	GOOD	GOOD	EXC	GOOD	POOR		GOOD 79.3%
		3	3	3	6	15	3	7	15	12	7	1		
		1.00	1.00	1.00	0.67	0.83	0.50	0.78	0.83	1.00	0.78	0.33	8.72	
8	Lefcoe	EXC	EXC	V POOR	EXC	V POOR	EXC	V POOR	MOD	GOOD	MOD	POOR		MODERATE 59.3%
		3	3	0	9	4	6	1	10	9	5	1		
		1.00	1.00	0.00	1.00	0.22	1.00	0.11	0.56	0.75	0.56	0.33	6.53	
9	Lindqvist	EXC	EXC	EXC	MOD	EXC	GOOD	EXC	EXC	EXC	V	V POOR		GOOD 78.9%
		3	3	3	6	20	8	9	17	12	2	0		
		1.00	1.00	1.00	0.67	0.95	0.89	1.00	0.94	1.00	0.22	0.00	8.67	
10	Lundh	EXC	EXC	EXC	MOD	GOOD	EXC	EXC	EXC	EXC	EXC	V POOR		GOOD 86.1%
		3	3	3	6	17	9	9	18	12	9	0		
		1.00	1.00	1.00	0.67	0.81	1.00	1.00	1.00	1.00	1.00	0.00	9.48	
11	Nykvist	EXC	EXC	EXC	EXC	GOOD	MOD	EXC	GOOD	EXC	POOR	POOR		GOOD 81.1%
		3	3	3	6	13	4	9	15	11	4	1		
		1.00	1.00	1.00	1.00	0.72	0.67	1.00	0.83	0.92	0.44	0.33	8.92	
12	Poureslami	EXC	EXC	MOD	MOD	MOD	MOD	MOD	GOOD	GOOD	EXC	EXC		GOOD 78.5%
		3	3	2	6	10	4	5	14	9	9	3		
		1.00	1.00	0.67	0.67	0.56	0.67	0.56	0.78	0.75	1.00	1.00	8.64	
13	Robinson	EXC	EXC	MOD	MOD	MOD	EXC	EXC	GOOD	EXC	GOOD	V POOR		GOOD 79.8%
		3	3	2	6	12	6	9	16	12	8	0		
		1.00	1.00	0.67	0.67	0.67	1.00	1.00	0.89	1.00	0.89	0.00	8.78	
14	Schofield	EXC	EXC	EXC	MOD	GOOD	MOD	EXC	MOD	GOOD	GOOD	POOR		GOOD 79.0%
		3	3	3	6	17	5	9	12	9	7	1		
		1.00	1.00	1.00	0.67	0.94	0.56	1.00	0.67	0.75	0.78	0.33	8.69	
15	van Eerd	EXC	EXC	EXC	EXC	EXC	EXC	MOD	EXC	EXC	GOOD	POOR		GOOD 88.9%
		3	3	3	6	18	9	6	18	12	7	1		
		1.00	1.00	1.00	1.00	1.00	1.00	0.67	1.00	1.00	0.78	0.33	9.78	
16	Vuong	EXC	EXC	EXC	GOOD	EXC	EXC	GOOD	EXC	EXC	GOOD	EXC		EXCELLENT 93.1%
		3	3	3	7	19	9	7	18	12	7	3		
		1.00	1.00	1.00	0.78	0.90	1.00	0.78	1.00	1.00	0.78	1.00	10.24	
17	Wilson	EXC	EXC	EXC	EXC	GOOD	GOOD	EXC	GOOD	EXC	GOOD	EXC		EXCELLENT 94.4%
		3	3	3	9	15	5	9	15	12	8	3		
		1.00	1.00	1.00	1.00	0.83	0.83	1.00	0.83	1.00	0.89	1.00	10.39	
Mean Score		1.00	1.00	0.90	0.82	0.80	0.75	0.71	0.86	0.92	0.80	0.45	Mean	81.8%
Standard Deviation		0.00	0.00	0.26	0.16	0.20	0.28	0.37	0.13	0.11	0.23	0.35	Std Dev	10.41%

Table 4 CASP Scores for Qualitative Papers

Appendix G – Theme Quality and Coverage by Paper

Paper Number		11	7	17	14	12	15	2	9	3	10	16	1	8	4	5	6	19	20	13	18	Papers covered by subtheme	Subtheme Quality (mean)	Papers covered by theme	Theme Quality (mean)
Subtheme\Author		Nykvist	Jonsdottir	Wilson	Schofield	Poureslami	van Eerd	Eklund	Lindqvist	Gullick	Lundh	Vuong	Burrows	Lefcoe	Halding	Hansen	Jones	Hilberink (Quan)	Lundh (Quan)	Robinson	Bjarnason (Quan)				
Paper Quality		81.1%	79.3%	94.4%	79.0%	78.5%	88.9%	95.2%	78.9%	65.4%	86.1%	93.1%	91.6%	59.3%	91.0%	81.6%	67.4%	86.7%	81.7%	79.8%	81.7%				
1	Blaming Others	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			17	82.4%	19	82.1%
	Smoking as Relating	X		X		X		X				X	X	X				X		X		8	81.5%		
2	Downplaying Links	X	X	X	X	X	X	X	X	X		X	X	X	X	X				X	X	16	80.8%	16	80.8%
	Outsourcing Causes		X		X		X		X	X			X	X	X	X					X	10	80.5%		
	Acceptance			X	X		X	X	X	X						X						7	83.3%		
3	It's my choice	X	X	X		X	X	X			X	X	X	X	X			X			X	13	83.6%	16	82.0%
	Out of my control	X	X		X	X	X	X			X	X	X	X	X					X		13	80.7%		
4	Critical self	X	X	X			X		X		X		X		X	X	X		X	X	X	13	83.3%	15	81.9%
	Avoidance	X	X	X	X					X	X				X				X			8	82.3%		
5	Perceived Threats	X	X	X	X	X		X	X	X	X					X						10	82.0%	14	82.0%
	Resignation	X	X	X		X					X	X					X	X	X			9	83.1%		
6	Compensating Strategies	X	X	X	X	X		X	X		X		X	X				X				11	82.3%	12	82.8%
	Imagined efficacy			X			X	X			X											4	91.2%		
7	Calms and soothes	X	X		X	X	X		X		X	X										8	83.1%	12	83.4%
	Assists the body	X			X	X	X	X				X		X								7	82.2%		
	Stimulation	X	X	X		X						X						X				6	85.5%		
Themes covered by paper		7	7	7	7	6	6	6	6	5	5	4	5	5	4	4	5	4	4	4	3				
Subtheme Coverage by paper		81%	75%	75%	63%	63%	63%	56%	56%	50%	50%	50%	44%	44%	44%	38%	38%	31%	31%	25%	25%				

Table 5 Quality, Theme and Subtheme Coverage by Paper

Appendix H – Comparison of Findings to Existing Theories, TTQ and TPB

Evidence of mood difficulties, anxiety and self-critical processes within this review support the previous findings of increased anxiety and depression in smokers with COPD (Armannsdottir & Jonsdottir, 2014 and Gudmundsson et al., 2006). van Eerd et al. (2015) (a related paper that did not meet the inclusion criteria) reported that COPD sufferers were more aware of, and more concerned about, health risks of smoking, that they also experienced higher levels of depression than non-COPD smokers, and that they received more cues to quit from their GP and their social environment. The findings of this review only partially support this; whilst papers evidenced acknowledgement of the damage caused by smoking, in many cases the damaging role smoking played in COPD was often down-played or denied as seem in Theme 2.1 and 2.2. The role of self-criticism and the strong negative emotional descriptions that constituted part of Theme 4.1 may be related to depression. The increased cues to stop smoking may be related to parts of sub-theme 1.1 blaming others, however there were also many cues to continue smoking in Theme 1.

Whilst this review has makes no attempt to ascertain factors that predict cessation in COPD it is worth comparing findings to the existing models. Despite a factor analysis of the 14 item TTQ stating it accounts for 90% of the variance of smoking beliefs (48), comparing overall findings to the TTQ from Lundh et al (2012) and (2016) by juxtaposing Table 4 with the weighted percentages in Figure 9, it can be seen that their model would only account for 49.15% of the findings of this review.

A liberal and crude mapping of the themes of this review to the expanded-TPB (theme 1 to subjective norms, theme 2 to attitudes, theme 3 to perceived behavioural control and theme 6 to self-exempting beliefs) suggests the model would capture 63.86% of the of findings from this review, *if every* data code from each theme was encapsulated as a question within the four sub-components. The TPB has already been identified as lacking predictive power of cessation intentions in non-COPD smokers with studies showing the model to only account for 30% to 49% of the variance in intention to quit (8,49). TPB subjective norms have also been found to be a weak predictor of intentions (50), yet codes for the sub-theme (1.1) blaming others were the largest in terms of coded data extracted and would suggest otherwise. Additionally, perception of behavioural control, usually the best predictor

of behavioural intentions, was evident in Theme 3.1 suggesting that smokers with COPD and a sense of control do not necessarily give up.

The utility of existing models is therefore questionable. The opposing and contradictory viewpoints people can hold about smoking with COPD might suggest the inherent assumptions of socio-cognitive models, that rational thoughts lead to intention/action, may be their greatest weakness when applied to COPD smokers. What cannot be elucidated from this review is how much sufferers actually-believe the view-points they espouse, it may be that view-points are deployed defensively to ward off distress in a way akin to psychodynamic theory, or that they genuinely believe the views they express in delusional way, or in the case of hypoxaemia possibly in a cognitively deficient way (51). What seems to be clear from this review is that there are broad positions, ranging from rational to very irrational, that may be adopted by smokers with COPD and that thus far no model has adequately captured this. Application of the Beck et al. (1993) model may capture more of this broad concourse through the concept of 'facilitation beliefs' and 'automatic thoughts' but these could equally be too vague. Any future attempt to model a process with an individual would need to take account of systemic and relational factors which seem so key to this review. There may be wider functions of continuing to smoke (or that smoking is an expression of other difficulties) than a cognitive health model would capture; for example the data found in Theme 3.1 might suggest something about a way of perceiving and responding to attempts to be controlled, akin to the Cognitive Analytic Therapy concept "If I must then I won't" (52), which may be a wider way of relating to the world, not just about smoking.

Appendix I – Contextual Reflections

Some of the data in the review leads to questions about the position of smoking in relation to other addictive behaviours; some papers reported participants as pointing out the rehabilitation facilities available for drug takers and people who misuse alcohol, but a lack of parity for smokers. This subtle difference may reinforce the self-blame and critical-self positions as health services and wider-society positions smoking as something more of a lifestyle choice, and that *should* be easier to deal with. The findings of this review maybe particularly useful to clinical teams in areas of high incidence and mortality from COPD (often lower socioeconomic areas with industrial histories) where ability to help may be more urgently required, e.g. Stoke-on-Trent where COPD mortality is 68% higher than UK average (British Lung Foundation, 2017).

Contextualising the results, conflation of maintenance of COPD with its cause appears to be utilised by those who wish to continue smoking (Theme 2). However, it must be considered from a wider view that targeting smoking in the mainstream keeps the focus away from potential blame against industry or authorities which COPD sufferers might believe are responsible for their illness. Whilst any links (or lack of declarations) between research findings and pharmaceutical or other organisations may be entirely spurious, it is implored that the findings from this review (particularly Theme 2) are produced in the context of helping people improve their current health by trying to improve opportunities for smoking cessation, rather than making any inference about the cause of COPD in any given case. Given some of the examples within the papers (e.g. Gullick & Stainton, 2006; Hansen et al., 2007) clinicians would be wise to focus on the damage being caused currently (and the evidence base for this) rather than drawing back to causal inferences which may be experienced as dismissive, and may not be entirely true when clients have worked in industries linked with respiratory diseases.

Appendix J – Journal Submission Guidelines for Authors

Thank you for choosing to submit your paper to us. These instructions will ensure we have everything required so your paper can move through peer review, production and publication smoothly. Please take the time to read and follow them as closely as possible, as doing so will ensure your paper matches the journal's requirements. For general guidance on the publication process at Taylor & Francis please visit our Author Services website.

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About the journal

COPD: Journal of Chronic Obstructive Pulmonary Disease is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's Aims & Scope for information about its focus and peer-review policy.

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All authors submitting to medicine, biomedicine, health sciences, allied and public health journals should conform to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, prepared by the International Committee of Medical Journal Editors (ICMJE).

Submission types

COPD: Journal of Chronic Obstructive Pulmonary Disease accepts the following types of submissions:

Original Articles. The body of original articles should include the following distinct sections:
• Introduction: This section should state the background to and purpose of

the
study.
• Methods: Please identify the methods, mechanisms, and procedures in sufficient detail to allow others to reproduce the results, and describe statistical methods with enough detail to enable a knowledgeable reader with
access to the original data to verify the reported results. COPD: Journal of Chronic Obstructive Pulmonary Disease requires that studies involving animals/humans be approved by an institutional review board, in accordance with approved published guidelines, prior to actually performing the research and publishing the data. This approval should be explicitly stated in the
• Results: Please present your results concisely and accurately. For studies reporting clinical trials, include the sample size of each data point, with p-values and confidence intervals quoted for both significant and non-significant
findings.
• Discussion: This should include implications of the findings and their limitations, with reference to other relevant studies and the possibilities these
suggest for future research.
• Conclusions: Ensure that extrapolations are reasonable and that conclusions
are justified by the data presented.

Review Articles. The body of a review article should be a comprehensive, scholarly evidence-based review of the literature, accompanied by critical analysis and leading to reasonable conclusions. Wherever appropriate, details of the literature search methodology should be provided, i.e. the databases searched, the search terms and inclusive dates, and any selectivity criteria imposed. Wherever possible, use primary resources, avoiding "Data on File", "Poster" or other unpublished references.

Letters to the Editor. Letters to the Editor will be considered for publication subject to editor approval and
provided that the content relates to articles published in the journal. Letters should be received less than six months after publication of the original work in question. Pending editor approval, letters will be submitted to the author of the original paper in order that a reply can be published simultaneously.

Commentaries.
All commentary topics must be agreed with the editor prior to submission. Commentaries should be knowledge-based or consensus-type articles (e.g. working group statement) expressing objective opinions, experiences or perspectives on an important area related to *COPD: Journal of Chronic Obstructive Pulmonary Disease.*

Book Reviews. *COPD: Journal of Chronic Obstructive Pulmonary Disease* considers a limited number
of book reviews. Book review ideas must be checked with the editor prior to submission.

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Formatting and templates

Papers may be submitted in any standard file format, including Word and LaTeX. Figures should be saved separately from the text. The main document should be double-spaced, with one-inch margins on all sides, and all pages should be numbered consecutively. Text should appear in 12-point Times New Roman or other common 12-point font.

Statistical Notes. All articles reporting on clinical trials should conform to the CONSORT statement. These studies should contain details of the study population and setting; subject selection (inclusion/exclusion criteria); methods of randomization and blinding; and efficacy and safety measures. The study design and statistical methodology should be described, along with justification for the choice of analysis and sample size given. Statistical methods used to compare groups for primary outcomes should specify what type of confidence interval was employed, and any additional methods for analyses (subgroup, adjusted) should be reflected as well. The sample size of each
data point should be shown, with p-values and confidence intervals quoted for both significant and non-significant findings.

Genomics Data. Ensure that all data collected and analyzed in conducted experiments adhere to the Minimal Information About a Microarray Experiment (MIAME) guidelines. The MIAME checklist is available. We ask that authors submit all primary microarray data to an appropriate public repositories (ArrayExpress, GEO, or CIBEX) in a format that complies with the MIAME guidelines by the time of publication.

 Nucleic acid or protein sequences should be deposited in EMBL or Genbank databases and accession numbers submitted prior to publication of manuscripts

Notes on Style. *COPD: Journal of Chronic Obstructive Pulmonary Disease* conforms to the AMA style guidelines, using the NLM style for references. For general abbreviations and nomenclature, authors should consult the latest edition of the AMA Manual of Style: A Guide for Authors and Editors. Authors should write in clear, concise English. Language and grammar should be consistent with Fowler's English Usage; spelling and meaning of words should conform to Webster's Dictionary. If English is not your native language, please ensure the manuscript has been reviewed by a native speaker. Please note: extensive rewriting of the text will not be undertaken by the editorial staff.

·   Please note the following general style guidelines:

·   Do not use the term "significant" unless p-values are provided. Show p-values as <0.001 or to 2 or 3 decimal places.

·   When a trademarked pharmaceutical or other product is named in the research, it must be accompanied by the generic name as well. According to journal style, after first mention, only the generic name should be used. Do not use proprietary names in article titles or in the abstract.

·   Latin terminology, including microbiological and species nomenclature, should be italicized.

·   Use standard convention for human and animal genes and proteins: italics for genes and regular font for proteins, and upper case for human products and lower case for animal products.

·   Upper case characters in headings and references should be used sparingly, e.g. only the first word of paper titles, subheadings and any proper nouns begin upper case; similarly for the titles of papers from journals in the references and elsewhere.

·   All acronyms for national agencies, examinations, etc., should be spelled out the first time they are introduced in text or references. Thereafter the acronym can be used if appropriate, e.g. "The work of the Assessment of Performance Unit (APU) in the early 1980s …" and subsequently, "The APU studies of achievement …", in a reference "(Department of Education and Science [DES] 1989a)".

·   Please do not label people according to their disability or disease. Instead, use person-first language (patients diagnosed with COPD, children with asthma, etc).

·   Please do not use commas in numbers with more than three digits. In 4- digit numbers, the digits are set closed up. For numbers of 10 000 or greater, a half-space or thin space is used to separate every digit from the right-most integer or decimal point. For decimals, use the form 0.05 (not .05, × 05 or 0× 05).

Style guidelines

Submissions to *COPD: Journal of Chronic Obstructive Pulmonary Disease* should follow AMA and Vancouver style guidelines. *Merriam-Webster's Collegiate Dictionary* (11th ed.) should be consulted for spelling.

References

References should be presented in a separate section at the end of the document, in accordance with Vancouver system guidelines (see *Citing Medicine*, 2nd ed.). The references should be listed and numbered based on the order of their first citation. Every reference should be assigned its own

unique number. References should not be repeated in the list, with each mention given a different reference number, nor should multiple references be combined under a single reference number. Superscripted digits should be used for in-text citations. Superscripted citations should follow periods, commas, closed quotation marks, question marks, and exclamation points.

Author listings in references should be formatted as indicated below.

1 author	Smith A.
2 to 10 authors	Smith A, Jones B, Smythe C, Jonesy D, Smitty E, Jonesi F, Smithe G, Janes H, Smithee I, Junes J
11 or more authors	Smith A, Jones B, Smythe C, Jonesy D, Smitty E, Jonesi F, Smithe G, Janes H, Smithee I, Junes J , et al.

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Book

2. Duke JA. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL: CRC Press; 2001. 676 p.

Edited book chapter

34. Gordon S. Career transitions in competitive sport. In: Morris T, Summers J, editors. Sport psychology: theory, applications and issues. Milton, Australia: Wiley; 1995. p. 474-93.

Online/Website

8. United States Census Bureau: Census.gov [Internet]. Washington (DC): United States D; c. 2014. American housing survey: 2013 detailed tables; 2014 Oct 16 [cited 2014 Oct 21]; [1 screen and data files]. Available from: http://www.census.gov/newsroom/press-releases/2014/cb14-tps78.html.

Dissertation/Thesis

26. Allison N. Bacterial degradation of halogenated aliphatic acids [dissertation]. [Nottingham (UK)]: Trent Polytechnic; 1981. 120 p.

Conference presentation

4. Alfermann D, Gross A. Coping with career termination: it all depends on freedom of choice. Paper presented at: 9th Annual World Congress on Sport Psychology; 1997 Jan 23; Netanya, Israel.

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Chapter 2

Empirical Paper

What thoughts permit people with COPD to continue to smoke?
A Q-Methodological Study

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Figures and Tables

Abstract

Objective

This study used Q-methodology to identify the shared views of people with Chronic Obstructive Pulmonary Disease (COPD) about why they continue to smoke.

Design

Q-sorts were undertaken with 22 participants, who sorted 73 statements by their level of agreement. By-person factor analysis was undertaken yielding three interpretable factors, each understood to represent a distinct position on continuing to smoke with COPD.

Outcome Measures

Q-sorts, Hospital Anxiety and Depression Scale (HADS), desire to quit

Results

'Stoic Fatalism', describes continued enjoyment of cigarettes as a choice, justified by it being too late to stop. 'Optimistic Passivity', justifies continuing by it not being too late to quit, with guilt mitigated by cutting down, and planning to quit. Addiction, and regulation of depression and anxiety are also strongly implicated in the first two factors. 'Ambivalent Masochism' describes smoking as enjoyable slavery, uncertainties about the relationship between COPD and smoking permit smoking to continue. HADS scores were independent of factors, Stoic Fatalism was the only factor to load with people with no desire to quit smoking.

Conclusion

When working with people with COPD, Clinical Psychologists should carefully consider the role of smoking in the formulation of any mental health difficulty, adapting interventions to address these in tandem where applicable. Further research is needed.

Keywords: COPD, Smoking, Cessation, Cognitions, Beliefs, Why

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term for a chronic bronchitis and/or emphysema which are progressive, and ultimately fatal, respiratory illnesses; COPD is mainly caused by smoking. A number of approaches are recommended for the management of the condition but the most important is smoking cessation (National Institute for Health and Care Excellence, 2010). Between 30%-43% of people with COPD continue to smoke (Tashkin & Murray, 2009), and they are at greater risk of mortality than both people who smoke without COPD, and people with COPD who do not smoke (Shavelle, Paculdo, Kush, Mannino, & Strauss, 2009). People with COPD who smoke experience more difficulties with anxiety (Armannsdottir & Jonsdottir, 2014) and low mood (Gudmundsson et al., 2006) than people who do not smoke, and strong interactions have been found between smoking, anxiety, depression and mortality (Lou et al., 2014). Adverse childhood experiences have also been shown to be related to continued smoking in sufferers of smoking-related illnesses, and it is suggested that the resultant external locus of control, poor self-esteem, and low self-efficacy influence both health beliefs and behaviour (Edwards, Anda, Gu, Dube, & Felitti, 2007). Given the seriousness of continued smoking, understanding the psychological health, smoking behaviour, and the interplay between them for people with COPD is of paramount concern.

Smoking addiction and behaviour

Nicotine is a highly addictive stimulant that releases dopamine by acting upon nicotinic receptors in the acetylcholine system (Benowitz, 2010). Excitation of

dopaminergic neurons is further increased by augmented glutamate and GABA in response to nicotine, as desensitisation to nicotine occurs (Benowitz, 2010). Nicotine withdrawal is associated with side-effects such as cravings for smoking, sleep changes, feeling irritable, and eating more; those who smoke tend to do so repeatedly (Morrison & Bennett, 2012). However, biological models do not incorporate beliefs, or cognitive processes, which must play a role in deciding to start smoking, and to continue, in the face of both hypothetical, and real, health-threat information.

Festinger hypothesised that receiving information about the health effects of smoking, whilst continuing to smoke, leads to cognitive dissonance that is resolved by rationalisations or mediating beliefs that render the behaviour acceptable (Cooper, 2007); an example being 'I exercise therefore that outweighs the damage from smoking'. Two well-researched approaches to understanding the cognitive processes involved in decisions about health behaviour are the Theory of Planned Behaviour (TPB), and the Health Action Process Approach (HAPA) (Morrison & Bennett, 2012). The TPB has been applied to smoking attitudes, with findings indicating that belief in susceptibility to ill-health and positive behavioural control beliefs are the strongest predictors of intention to quit smoking (Norman, Conner, & Bell, 1999). An application of an expanded TPB model, including self-exempting beliefs, demonstrated that self-exemption was used to deny risk e.g. people believing they smoke too few cigarettes to affect their health (Peretti-Watel, Halfen, & Grémy, 2007). The HAPA model has been applied to smoking and findings have shown lower risk perception was related to a lack of intention to quit smoking (Williams, Herzog, & Simmons, 2011) and compensatory health beliefs (e.g. I do not need to quit smoking because I eat healthily) are strongly negatively correlated with quit intentions (Radtke, Scholz, Keller, & Hornung, 2012). The Transtheoretical Model

of Change (TTM) is a stage-based model that predicts that people go through five stages (six including relapse) in changing addictive behaviours (Prochaska, Diclemente, & Norcross, 1992), although the cognitive dimensions of the model are less categorically defined than the TPB or HAPA. Collectively, for people without COPD, these studies imply beliefs that are compensatory, self-exempting, and pertain to low-risk susceptibility, and low behavioural control predict continued smoking. Poor knowledge and emotional arousal about tobacco use, and its impact on their environment are also implied predictors of continued smoking.

Beck, Wright, Newman and Liese applied the theories of Cognitive Behavioural Therapy (CBT) to difficulties with substance use and alcohol consumption (Beck, Wright, Newman, & Liese, 1993); the construct of facilitation beliefs was introduced, whereby automatic thoughts, cravings and any prior anticipatory beliefs do not lead to the usage of a substance, rather an additional cognitive process occurs, where a person must permit themselves to undertake the behaviour (i.e. mediating beliefs). The model is distinct in that it describes the maintenance of unhealthy behaviour (i.e. models how a behaviour continues) rather than attempting to predict health behaviour change (as in socio-cognitive models such as the TPB). The Beck et al model has not been applied to tobacco smoking, it is unclear why, but smoking is less socially problematic than excessive alcohol use or drugs (Turp, 2002), despite its devastating health effects. However, reference has been made to the CBT model in a study on self-exempting beliefs in smokers; negative affect aroused from competing health messages creates cognitive dissonance, which further reduces the likelihood of quitting smoking by healthy smokers who hold strong facilitation beliefs (Dijkstra, 2009).

A review of several Health Psychology models noted that none are fully inclusive of all belief types, there are overlaps between concepts (e.g. self-efficacy and perceived behavioural control) and that most models have had limited application beyond trying to predict behaviour change (Taylor et al., 2006). These frameworks perhaps lack the breadth to model complex addiction behaviours compared to more volitional behaviours, and it is notable that beliefs such as reduction of stress and prevention of weight gain do not pertain to TPB/HAPA models (Morrison & Bennett, 2012). Yet these beliefs have been found in research on people who smoke, and some instances continue to persist in in ex-smokers, such as people believe they will gain weight from stopping smoking (Chapman, Wai Leng Wong, & Smith, 1993). Facilitation beliefs have been shown to inhibit change within the constructs of the TTM (Kleinjan, van den Eijnden, Dijkstra, Brug, & Engels, 2006). Given the commentary on the complexity of smoking behaviour, categorisation of beliefs (as per most behavioural change models), or restriction to a questionnaire, potentially narrows the focus of a model and important information may be missed. This, and difficulties with replicability of factors identified in previous studies, might suggest that a single inclusive category of 'facilitation beliefs' is favourable (Dijkstra, 2009).

Missing variables limit the predictive power of any model; for example a review of the TPB from 185 studies found the model accounted for just 27% of the variance of behaviour (Armitage & Conner, 2001). Additionally, categorisation of beliefs may depend upon the context and the perspective of those applying the category; cutting down on cigarettes may be both permissive of continued smoking (in the sense of denial), and/or could be considered some acknowledgement of the dangers of smoking (Dijkstra, 2018). Categorisation brings into question the rationality of facilitation beliefs; risk of weight gain from stopping smoking is a factual belief and

is listed as a key risk factor for obesity (Atter et al., 2011), yet other beliefs such as 'lung cancer is mostly caused by air pollution' are patently incorrect (Chapman et al., 1993); others involve thinking biases, such as selective abstraction of evidence or over-generalization (Beck, 1988), e.g. 'many people live into very old age despite smoking' (Oakes, Chapman, Borland, Balmford, & Trotter, 2004). Of course, no delineation between variables also renders models much more difficult to use predictively, but other methods of categorisation exist; notably, none of the studies or models discussed explicitly categorised beliefs based upon on their factual accuracy or bias-type.

People with COPD who smoke

People suffering from COPD must differ to healthy smokers in that they now have a smoking-related disease, which poses questions about concepts such as perception of susceptibility to illness, and self-exemption. Differences in characteristics between people who smoke with COPD and those without COPD remain somewhat unclear. A large study comparing people who smoke, with and without a COPD diagnosis, found no statistically significant differences in ten different constructs of attitude towards smoking cessation, but did find levels of addiction were significantly higher in those with COPD (Jiménez-Ruiz et al., 2001). A survey found that people who smoked with COPD were more likely to be depressed, more cigarette dependant, report less self-efficacy and be more aware of the health risks of smoking that healthy smokers (van Eerd et al., 2015). Another study found that, despite mild COPD being a predictor, neither severe levels of COPD nor recent exacerbations of COPD predicted intention to quit smoking, and that poorer self-reported health decreases likelihood of intentions to quit smoking

(Melzer et al., 2016); this appears at odds to low risk susceptibility discussed previously in healthy smokers, and raises questions about if and how compensatory and self-exempting beliefs exist in people who smoke with COPD.

Several qualitative studies would suggest that people with COPD who remain smokers do hold these beliefs. Experiences of knowing people with COPD dying after stopping smoking, and low enough level of consumption of tobacco products being safe have been found as reasons to continue (Poureslami, Shum, & FitzGerald, 2015). Another study found beliefs that cigarettes improve breathing and clearance of phlegm from the chest, or that COPD was down to age, occupation or just luck-related; this study also noted cues to change smoking behaviour were not related to disease progression but external (Schofield, Kerr, & Tolson, 2007). Another found that people rated air pollution from cars as far worse than tobacco smoke, and that giving up smoking would mean becoming fat (van Eerd et al., 2015). Other beliefs include it being too late to stop, and that smoking alleviates anxiety and low mood (Vuong, Hermiz, Razee, Richmond, & Zwar, 2016). Accounts of cutting down during COPD exacerbations have also been found (Wilson, Elborn, & Fitzsimons, 2011). Evidence has been found of acceptance of the relationship between smoking and COPD, but reasons such as plans not leading to outcomes, and other life-events distracting from cessation, were cited as reasons for continued smoking, and attempts to influence by others were also seen as demanding and patronising (Eklund, Nilsson, Hedman, & Lindberg, 2012). These reasons all have the potential to resolve cognitive dissonance when faced with the dilemma of smoking or quitting.

Hilberink, Jacobs, Schlosser, Grol and Vries, (2006) found those with COPD who are unmotivated require support with finding advantages to quit, whereas people

motivated to quit require support with self-efficacy and planning. However, the benefits of motivation-stage-based interventions for smoking cessation in the general population remains unclear (Cahill, Lancaster, & Green, 2010). Motivational Interviewing (MI) for smoking cessation has been subjected to a Cochrane systematic review with findings suggesting a limited success rate in healthy smokers, but more effective than advice or no treatment (Lindson-Hawley, Thompson, & Begh, 2015). There is little evidence for the effectiveness of MI specifically with people with COPD who smoke, but one study suggests it has very limited efficacy for evoking reasons to change behaviour, but that is complicated by deviations of practitioners from MI methods in the study (Efraimsson et al., 2015).

The Trying to Quit (TTQ) questionnaire was created to test whether scales, developed from a prior qualitative study on the process of trying to quit smoking with COPD, predicted smoking cessation, (Lundh, Hylander, & Törnkvist, 2012). The results of the 19-item TTQ were largely insignificant, but demonstrated a higher score predicted less chance of a quit attempt, and that 'pressure filled mental states' (pertaining to largely self-critical thoughts) predicted lower chance of quitting in those ready to quit, and higher chance of reduced smoking in those not ready to quit (Lundh, Alinaghizadeh, Törnkvist, Gilljam, & Galanti, 2016). Whether this 'cutting down' is a compensatory belief, or a move to prepare to quit, is unclear. This again highlights the problems with categorisation of beliefs / constructs within questionnaires. Confrontational counselling was developed for people with early-stage COPD to encourage people to think and discuss their smoking related beliefs and behaviours (Kotz, Huibers, Vos, van Schayck, & Wesseling, 2008). A randomised controlled trial concluded that the content of the therapy (rather than intensity) may alter smoking related cognitions and lead to successful smoking

cessation (Kotz, Huibers, West, Wesseling, & van Schayck, 2009).

However, a recent Cochrane review of smoking cessation interventions for people with COPD found that high intensity behavioural interventions combined with pharmacotherapy resulted in people being twice as likely to quit than with behavioural interventions alone; some evidence suggested higher intensity behavioural interventions are more effective, but there was no evidence of difference in effectiveness of behavioural method. The review also concluded there is still a lack of evidence as to whether smoking cessation needs are different for people with COPD to those without (van Eerd, van Der Meer, van Schayck, & Kotz, 2016).

The lack of evidence for motivational interviewing, relative homogeneity of effectiveness of behavioural smoking interventions, the heterogeneity of the beliefs that people who smoke with COPD hold, as well as the relationship with anxiety and depression behoves further understanding of the psychological mechanisms that maintain smoking. Viewpoints of healthy smokers have been explored using Q-methodology (Collins, Maguire, & O'Dell, 2002; Farrimond, Joffe, & Stenner, 2010), but no study has applied this to explore viewpoints amongst people with COPD to identify the viewpoints that permit continued smoking.

Aims

The aim of this study is to understand the diversity of, and relationships between, the shared explanations of people with COPD in making the decision to continue smoking. The research question being 'what are the shared explanations people with COPD give when deciding to continue smoking?'

Method

Design

This cross-sectional study utilised Q-methodology to examine inter-subjectivity of beliefs used by people with COPD to justify smoking. Q-methodology utilises the placement of statements (referred to as the Q-set) onto a grid for identifying how groups of people makes sense of a subject in similar or differing ways (Watts & Stenner, 2005). Q-methodology differs from R-methodology (regular factor analysis) in that the participants (referred to as the P-Set) are considered the variables, rather than statements/questions (which would be the case in a questionnaire). Factor analysis in Q-methodology compares the sorts (i.e. each person) with one another to identify factors, rather than comparing statements with one another. The outcome of this by-person factor analysis are groups who share similar viewpoints based on the set of statements (Watts & Stenner, 2012). Q-sorts which load on to a factor are merged to give an ideal factor array from which these shared viewpoints can be interpreted. Although not used to generate predictions, Q-methodology is an abductive approach, and can be used to create hypothetical explanations generated from individual unique experiences (Shank, 1998).

Ethical Approval

The study protocol was peer-reviewed and approved by the sponsor (Staffordshire University). Health Research Authority, NHS Research Ethics Committee and local NHS body approvals were obtained (see Appendixes A-F).

People invited to the study were asked to express interest in participation directly to the researcher to minimise effects of power relations (i.e. avoid a sense of obligation to the inviting clinician who is also providing their clinical care); the information packs given were designed to be accessible in terms of reading age ability, these factors ensured that consent to be contacted was both informed and voluntary. After taking part, participants were given time to withdraw their data; none withdrew consent after completing their participation. Data was anonymised.

Materials and Measures

Derivation of the concourse (the Q-set) involved using information from a systematic search and review of the research literature in July 2017 (see Chapter 1) to create 52 statements. Consultations with other psychologists, NHS COPD staff, a peer-led charity support group for COPD sufferers, as well as reflections on clinical experiences, edited and refined this to 73 (see Appendix I). These were printed onto laminated cards with a unique number on the reverse. Velcro was added to enable ease of placement. An A0-size foam board was utilised to create the Q-grid.

The Q-grid was designed for the process of ipsative (forced choice) sorting of these statement cards based on a quasi-normal distribution curve, with 13 columns ranked from -6 (least like my thoughts) to +6 (most like my thoughts) – see Figure 1. The ipsative approach was deemed acceptable due to the enormous number of permutations available in a 73 statement 13 column grid. An electronic duplicate of the study was created using the software QSortWare (Pruneddu, 2018) and Qualtrics (Qualtrics, 2018) and made available online with a dedicated website.

Rank	-6	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6
Statements (n)	2	4	5	6	7	8	9	8	7	6	5	4	2

Figure 1 Q-grid Layout

The Hospital Anxiety and Depression Scale (HADS) was utilised to measure

depression and generalised anxiety (Mykletun, Stordal, & Dahl, 2001). Age, gender,

ethnicity, desire to quit smoking, and the number of previous quit attempts were also

recorded about the participants (P-Set); this information was used to help understand

the factors derived from the Q-sort process, and how they may differ from one

another (e.g. is one viewpoint predominantly expressed by men?) (see Appendix M).

Key points and remarks were written down to aid understanding of the ideal factor

arrays during the analysis process.

Participants

The P-Set comprised of a purposive sample of 18 participants with a

diagnosis of COPD, under the care of three Secondary Care NHS Respiratory

Teams, with another 4 participants recruited online using social-media platforms.

Table 1 illustrates participant characteristics.

Table 1 Participant Characteristics

Variable Name	Category	No. (%)
Age	50-59	3 (13.6%)
	60-69	7 (31.8%)
	70-79	12 (54.5%)
Gender	Male	10 (45.5%)
	Female	12 (54.5%)
Ethnicity	White	21 (95.5%)
	Not Stated	1 (4.5%)
Previous Quit Attempts	1-5	14 (63.6%)
	6-10	6 (27.3%)
	11+	2 (9.1%)
Desire to Quit Smoking	No Desire	6 (27.3%)
	Somewhat	6 (27.3%)
	Very Much	9 (40.9%)
	Quitting Now	1 (4.5%)

Participants seen face-to-face were invited to the study by specialist nurses and physiotherapists. Online participants were recruited via promoted posts and tweets and relied on interested parties sharing the links directing them to the dedicated website. Informed consent was obtained.

Inclusion criteria were being a smoker (i.e. smoked in last 3 months) with COPD, to have capacity to consent to the study, and over 18 years old. People on Advanced Respiratory Disease Pathways and thought to be within 6 months of death, and those whose consent could not be reliably ascertained, were excluded from recruitment for ethical reasons.

Procedure

Participants completed the questionnaires and were then asked to think about why they continue smoking and to sort the 73 cards into piles of agree, disagree and neutral/unsure. They were then asked to place these on the grid in order that fitted their view, and when complete, asked to check the placements. They were invited to freely comment on the process and their beliefs throughout the process

Data Analysis

Q-sorts were analysed using the web-based program Ken-Q (Banasick, 2018) following guidelines from Watts & Stenner (2012). Factor interpretation considered both ideal factor arrays and participants' comments. A senior Clinical Psychologist also independently interpreted the ideal factor arrays, which yielded a consensus on the factors.

Results

Correlations

Significant correlation ($p<0.05$) was calculated to be (1.96 x (1/√n statements)) = 0.23 using the formula from Brown, (1980). Participants inter-correlated strongly indicating similarities in their viewpoints, with each sort correlating with between 2 and 17 other sorts (median 10.5) (Correlation Matrix is provided in Appendix G).

Data Analysis

Q-sorts were subjected to Factor Analysis (Table 2) to explore latent variables present in the data-set (Clark-Carter, 2010); the Centroid method has a long standing use in Q-methodology and is known for producing indeterminate numbers of solutions whilst not violating statistical assumptions (Ramlo, 2011). This

indeterminacy is compatible with the abductive approach of Q-methodology (Brown, 1980). Whilst the Kaiser-Guttman criteria (Watts & Stenner, 2012) indicates a 2-factor solution (Eigenvalues >1), the third factor's eigenvalue was close to one; minority views risk being overlooked by blanket application of arbitrary cut-off criteria (e.g. is a factor with an eigenvalue of 1.01 more important that one with 0.99) (Ledesma & Valero-mora, 2007), that is the number of sorters does not determine if a viewpoint is relevant (Ramlo, 2011). Humphrey's Rule, where a factor can be considered significant if the cross-product of the two highest loadings (independent of sign) of the factor exceed the standard error (Brown, 1980), was applied and indicated that a three-factor [1,2,3] solution was acceptable (see Appendix H). This solution explained 35% of the variance in the data and is considered a successful model (Watts & Stenner, 2012). Varimax orthogonal rotation was applied to maximise the differences between the three factors (Field, 2016) (see Appendix H for details).

Table 2 Unrotated Factor Loadings

Factor	Eigenvalues	% Explained Variance
1	5.2834	24
2	1.4933	7
3	0.9418	4
4	0.8021	4
5	0.7534	3
6	0.1866	1
7	0.1847	1

Reliability

Reliability was checked by repeating the Q-sort process four weeks later, with two people, early in the data collection process. Both repeat sorts correlated strongly with their original sorts at 0.72 and 0.66, with strong agreement/disagreement statements noted to be in similar positions suggesting viewpoints were stable.

Consensus Statements

Multiple statements were broadly consensual (no statistically-significant difference, $p > 0.05$) across the people loading onto the three factors. Smoking helps them to relax and not feel stressed (49, F1+5, F2+5, F3+4), and stops them becoming too irritable (52, F1+5, F2+3, F3+2). They accept that smoking worsens their COPD and it is their responsibility and the price they pay (5, F1+4, F2+3, F3+4), and disagree that smoking is just irritating their chests (4, F1-2, F2-4, F3-1), or there are no benefits to smoking cessation (39, F1-4, F2-5, F3-4). They also view alternatives to smoking as having too many side-effects (56, F1+2, F2+1, F3+1), do not experience embarrassment as a barrier to seeking help (24, F1-4, F2-3, F3-5), and do not see their engagement in Pulmonary Rehabilitation as mitigating their continued smoking (65, F1-3, F2-3, F3-4), nor do they vary the amount of smoke they inhale when unwell (32, F1-3, F2-4, F3-2). Smoking is not seen as particularly sociable or part of their social lives (58, F1-1, F2-1, F3-2). Despite being significantly different at $p < 0.01$, they shared the belief that the decision to stop smoking has to be their own (15, F1+5, F2+6, F3+4).

Beyond this consensus, three distinct positions justifying continued smoking with

COPD were identified. The ideal factor arrays are shown in Appendix J, and tables of distinguishing and consensus statements in Appendix K. Distinguishing statements within this text are referred to with an asterisk* next to the rank number for those significant at $p<0.05$, those at $p<0.01$ are shown with double asterisk**.

Factor 1:

This factor explained 15% of the variance, and 8 participants loaded on to this factor. Two participants were aged 50-59, six were aged 70-79. Five had no desire to quit, two some desire, one very much wanted to quit smoking. The number of previous attempts to quit ranged from 3 to 6. Mean HADS anxiety and depression scores were 6.6($\pm$4.8) (none) and 7.4($\pm$5.9) (none).

In addition to the consensus statements, this viewpoint represents people who justify continuing to smoke because they strongly enjoy it (18 +6), and they see being a smoker as somewhat part of their identity (59 +2*). Participant 2 particularly explained the various types of cigarettes they enjoyed in their lifetime. It is their choice and their business to continue smoking (10 +5**), and somewhat believe they could stop if they really wanted to (29 +2), yet, they are almost unsure as to whether they have the willpower and self-discipline to quit (28 +1), and experience addiction withdrawal symptoms as too unpleasant to stop smoking (14 +4), as having tried quitting before, it was awful (70 +3). However, in justifying continuing they are also very resigned to the idea that it is too late to stop as the damage is done (40 +6**), despite knowing that smoking causes and worsens COPD, they do not feel threatened by it (2 +2), and that you have to die from something (64 +4), most did not comment on these, excepting Participant 17 who said 'maybe it's not that bad-a-way to go'. Future-plans to stop smoking do not feature as part of their view (30 -

3**). They do not want to see doctors (27 +3**), are unsure whether cutting down smoking means there is no need to stop (71 0) and are unique in being ambivalent about whether they would accept someone flipping a switch to make them stop (33 0**).

As well as helping them to stay calm and less irritable, people represented in this factor also describe a number of additional benefits from smoking in that it stimulates them (50 +3**) and helps them to concentrate (48 +4*). They also see smoking as preventing them from becoming too anxious (51 +4), as well as stopping them from becoming depressed (53 +3). Participant 3 explained that 'If I quit I would go back because of my mood, it's a balancing act between smoking and depression'. They believe to some degree that smoking helps them clear their chest (45 +2) and think they would be bored if they stopped smoking (57 +2**).

They are realistic about the relationship between COPD and their smoking, strongly refuting the belief that smoking does not cause or worsen COPD (3 -6*), or that it is simply bad luck (6 -5), or just down to being old (7 -5). Unlike others they do not want to be shocked by what will happen if they do not stop (-16 6**), suggesting they might be aware of the consequences and do not want hear the details, but it is not their fault as the dangers of COPD were not known when they started smoking (11 +3). They hold some mitigating views by thinking of relatives who have lived to an old age despite a lifetime of smoking (69 +3*), or a possibility that quitting smoking may be dangerous to their health (41 +1); Participant 7 explained 'my mum died of cancer and never smoked, yet my dad quit smoking and then died from an arterial blockage, question is, did quitting smoking cause plaques to break off'.

They do not find it easier to deny and hide the fact they smoke (22 -5), and do not

blame feelings of guilt and shame for making them smoke (25 -2). Despite being resigned to the damage, they do not hold the view that smoking lighter cigarettes (72 -3**) or cutting down smoking when unwell (31 -2**), are justifications for continuing to smoke.

Factor 2:

This factor explained 12% of the variance, and 6 participants loaded on to this factor. One participant was aged 50-59, five were aged 60-69. One had some desire to quit, with five very much wanting to quit smoking. The number of previous attempts to quit ranged from 1 to 10. Mean HADS anxiety and depression scores were 8.5(±4.2) (mild) and 5.2(±3.7) (none).

People represented in this factor most strongly wish someone could simply flip a switch to get them to stop smoking (33 +6), and simultaneously believe it has to be their own decision to stop (15 +6). They strongly deny it is their fault as the dangers of COPD were not known when they started smoking (11 +5**). Being a smoker forms no part of their identity (59 -6**) and they strongly refute that they would mourn their cigarettes if they gave up (63 -6**); cigarettes are not their friends (61 -3**), and as such they are unsure if they like smoking (18 0**). Participant 10 illustrated this ambivalence in saying 'I like smoking, but I don't like it'.

They somewhat believe that other air pollutants are more damaging that smoking (73 +2), and strongly believe that it is helpful to cut down their cigarettes when feeling unwell (31 +5**). Participant 12 explained 'I've moved the cigarettes away from the sofa, so I have to get up and walk to get one, that has forced me to cut down; I also test my cough each day and if it's ok then I see it is ok to smoke'.

They also quite strongly believe they lack the willpower to quit (28 +4) yet purchase smoking aides and alternatives in case they wish to stop (35 +3**). They wish to be told to stop, and shocked about the consequences of not doing so (16 +2*), but conversely, strongly believe the more they are told not to smoke the more they do smoke (67 +4**). It is never the right time to quit as other things get in the way (23 +3); however, they plan on stopping in future which helps them feel okay (30 +4). Participant 15 went as far as saying 'I plan to stop when I go in for my operation'. To some extent they believe they are not offered enough support to quit smoking (21 +2**). They feel inferior for still smoking (26 +3), and guilty or ashamed of making themselves ill which leads them to smoke more (25 +2**). Participant 5 explained 'there is very little [cessation] help available from the NHS nowadays… I feel guilty for still smoking though'. They feel a sense of hopelessness about their smoking and their illness (42 +4), but do not tend to adapt to their symptoms (36 -4**), and are able to retain some optimism in not believing that it is too late to quit (40 -5**), nor that you have to die of something so why not carry on (64 -2**).

Beyond these, in addition to consensus statements, exemplars of factor two agree with factor one about preventing them from becoming depressed (53 +4), and to a lesser extent assisting with anxiety (51 +2), and concentration (48 +2). They somewhat believe that they can stop smoking if they really want to (29 +2), and do not deny and hide the fact that they smoke (22, -3), nor do they see COPD as just down to bad luck (6 -5). Withdrawal symptoms are described as unpleasant (14 +3), and quitting being awful is strongly cited (70 +5).

Factor 3:

This factor explained 8% of the variance, with a loading of 3 participants. Ages were in the 70-79 range, and quit attempts ranged from 1-17. Two participants very much wanted to quit smoking, whilst the other somewhat wanted to quit. Mean HADS anxiety and depression scores were 8.0(±3.6) (mild) and 6.7(±4.0) (none).

People represented in this factor very strongly see themselves as slaves to smoking (20 +5**) who adapt their lives to their COPD symptoms, so they do not notice their health worsening (36 +5**). They view cigarettes as friends (61 +5**) that would be mourned if given up (63 +2), and uniquely are very against the idea of banning smoking (17 -5**). They justify continuing to smoke by cutting their consumption right down (71 +2), participant 13 explained 'I wish I'd stopped when I had to go into hospital, but I've cut down from 30/40 to 10/15 per day'. Hiding or denying they smoke is seen as easier (22 +3**). Unlike the other two factors, withdrawal symptoms from smoking are not cited as problematic (14 -1**), and their smoking is not related to managing anxiety (51 -3**) or depression (53 -5**). The environment is seen as influential, as coming home to a familiar place after stopping starts them smoking again (19 +2*). Participant 18 explained 'I don't smoke at my daughter's, but I don't know why'.

There is understandable uncertainty as to whether they could quit if they wanted to (29 0*). They emphasise that they did not know smoking caused COPD (1 +3) and there is some agreement that their COPD is just down to bad luck (6 +1**). Despite accepting responsibility, an overall position of uncertainty is taken on whether smoking causes or worsens COPD within this factor (3 0**), and there is uncertainty as to whether there is a genetic reason for their condition (8 0**), as well as whether

smoking is part of their identity (59 0*). Participant 18 explained 'I believe that smoking is related to heart disease but not COPD'. Similarly, participant 13 stated 'I accept people say it's caused by smoking, I'm not sure if it is or it isn't'.

Participants in this factor share some characteristics of factors one and two. They have a similar strong enjoyment of smoking to factor one (18 +6), and to a lesser degree believe that it is too late to quit smoking as the damage is done (40 +3**) and that you have got to die of something (64 +3). They too believe that smoking helps them clear their chest of phlegm (45 +3). Like those in factor two, they wish that someone could flip a switch to make them stop (33 +6), and more strongly wish someone would shock them into stopping (16 +4*). They share a degree of hopelessness about their smoking (42 +3), a lack of willpower (28 +2), yet they strongly identify with planning to stop smoking in future (30 +5), but it is never the right time to stop (23 +2), and air pollution is considered more damaging for their health (73 +4). Participant 18 explained that 'the diesel fumes by the roads are terrible'.

Non-exemplar Q-sorts

Five sorts did not load onto a single factor. Participants 1 and 6 both loaded onto all three factors, and both discussed smoking when alone. Participant 1 described 'since I lost my partner I've noticed loneliness is a trigger, I get anxious which sets me off smoking, but I don't smoke when I'm with my friends'. Participant 6 also lived alone and explained that they had survived cancer, and noticed they smoked a lot more when alone 'those are the enjoyable cigarettes, when I'm on my own I'm not hurting anybody else, those are the ones I enjoy'. Both agreed smoking alleviates loneliness in their sorts (60 +6 and +4 respectively).

Participant 4 loaded onto factors two and three and stated that it was difficult living

close to a shop, and that the more they try and stop thinking about smoking the more

it happens. Participant 11 was actively preparing to quit on holiday and strongly

loaded onto factors two and three but interestingly found several of the statements

did not quite fit because she had decided to stop smoking. Participant 21 had just

started a quit attempt and loaded onto factors two and three.

Post-Hoc Analysis

Inspection of supplementary data (HADS, the desire to quit, gender etc)

noted differences in age and desire to quit between factors. Fisher's Exact Tests

showed that there was a statistically significant difference in the distribution of age

bands; factor two loaded with younger participants than factor one (p=0.001) and

factor three (p= 0.012). Desire to quit was significantly greater in factor two than

factor one (p=0.018), but differences in desire to quit between factors one and three

did not reach statistical significance (p=0.121). See Appendix L for details.

Discussion

Twenty-Two Q-sorts were undertaken, with factor analysis identifying three

shared viewpoints across seventeen participants, each giving differing reasons and

justifications for continuing to smoke with COPD, there were no observed

differences in HADS scores between factors, but those who had no desire to quit

smoking only loaded onto factor one. A summary of the factors and their meaning is

given in table 3.

Table 3 Factor Interpretations

Factor	Name	Explanation of Factor
1	Stoic Fatalism	People with this viewpoint accept that COPD is related to smoking and say that smoking prevents anxiety and low mood. Difficulties with addiction are also stated and smoking is a part of person's identity. The view is that continuing to smoke is the business and choice of the person with COPD, and they do not want to be shocked about what will happen, suggesting they do not wanting to stir up feelings (*Stoicism*). People with this view also say that the damage from smoking is already done, and that you have to die of something, meaning they think nothing can really be done (*Fatalism*) which justifies choosing to continue enjoying smoking.
2	Optimistic Passivity	People with this viewpoint accepts that COPD is related to smoking and, like factor 1, think that smoking prevents anxiety and low mood. However, people with this view do not particularly like smoking, and smoking is not a part of their identity. There is a desire to quit, and they are positive that it is not too late as there will be benefits to quitting *(Optimism)*. There is a feeling of guilt. By cutting down smoking when unwell, smoking lighter cigarettes, buying nicotine replacement therapy, planning on quitting in future, and thinking that it is never being the right time, they put off quitting. The wish that someone could flip a switch, or shock them into stopping is there, but when they are told to stop they just smoke more. This takes a step back from an active and determined position to quit (*Passivity*).
3	Ambivalent Masochism	People with this viewpoint have some positive thoughts about it not being too late to stop and about plans to quit, but also that it also might be too late – the mind cannot be made up. They seem to accept that smoking is probably making it worse, but also have some doubts about smoking causing their COPD *(Ambivalent).* People with this view are not worried about withdrawal symptoms from smoking but describe themselves as slaves to cigarettes. They would desperately like someone to be able to stop this magically, but just as strongly really enjoy smoking; control remains with the cigarettes and the harm is adapted to *(Masochism).*

Factor 1 – Stoic Fatalism

This factor appears to be a paradoxical juxtaposition of resignation and choice. Emphasis is on enjoyment and choosing to smoke which on face value may suggest choosing pleasure over health; however, the viewpoint also contains contradictory positions such as the damage is now done, and that you must die of something, but agreeing there are benefits to stopping. Furthermore, there are difficulties with addiction withdrawal symptoms, emotions and will-power. Choice is almost antonymous to addiction, yet paradoxically smoking is described as both. This contradictory positioning suggests a dilemma, perhaps that the perceived costs of quitting outweigh the benefits (e.g. worsening COPD and not depressed vs depression and still having COPD), or that quitting is futile i.e. my COPD will not get better either way. Essentially, people with this viewpoint express that because the damage is already done (fatalistic resignation), there is no point in stopping, therefore one chooses to continue smoking because one enjoys it (stoicism in the face of very few options). Further contradictory positions are noted, such as knowing the dangers of continuing, but suspicion that quitting might be harmful, and the denial of feeling hopeless about smoking and COPD, yet strong disagreement with the idea of being shocked about what will happen by continuing to smoke; this suggests despite intellectual understanding, that it might be emotionally uncomfortable to really consider the outcome of continuing to smoke. It would appear cognitive dissonance around quitting is resolved by framing smoking as a reasoned active choice, which gives a sense of control against the idea of being addicted; conversely, the fated outcome means it is unrelated to their choice (yet oddly most attend pulmonary rehabilitation classes) which serves to avoid feelings associated with smoking and the outcome.

Factor 2 – Optimistic Passivity

Whilst sharing similar perspectives on addiction, low mood and anxiety, what appears to distinguish this factor is a sense of desperation, guilt and wanting support against an addiction; the wish for an external magic solution is as strong as the almost opposing belief that they must make the decision in their own mind to quit, but yet they continue smoking cigarettes, despite not particularly liking smoking. Mitigating and exempting beliefs, and their related behaviours, appear to be deployed to deal with the guilt of continuing to smoke; these include cutting down smoking when unwell, rating air pollution as being worse than smoking, stocking-up on smoking cessation aides, smoking lighter cigarettes, and planning to quit one day, held around the idea that the damage is not done, and they do not have to die from their smoking (retaining a sense of optimism). The sense of this is 'yes I want to stop, but…', essentially quitting smoking is deferred but not dismissed and procrastination occurs. Uniquely, smoking is related to a feeling of inferiority, but a strong emphasis on not knowing the dangers previously, it not being the right time to stop, and that prior attempts to quit were terrible; these might further mitigate guilt and permit smoking to continue (passivity and procrastination). They state they require more support to quit, and want to be shocked in to it, but to tell them they need to stop leads to more smoking (in either defiance or helplessness); either-way the other becomes responsible, and they are further ensconced into a passive position. The passivity appears to link back to desperation in wishing smoking was banned. These findings are similar to those described by Eklund et al., (2012)**.** Like factor one, there are also reasons around mood and anxiety for continuing, which might exacerbate the sense of desperation, and possibly exacerbate the guilt and

shame they experience, but in contrast they are not fatalistic and retain hope of

change. The cognitive dissonance (and possibly the guilt) for this viewpoint seems to

be resolved by a sense of deferral; planning to stop *one day* when they get enough

support, that they have made changes, and it is not too late yet.

Factor 3 – Ambivalent Masochism

Factor three has a conflicted and undecided feel and is like being in two-

minds; smoking is positioned as out of personal control, as they are slaves to their

cigarettes, which they desperately want to stop, wishing something could do it for

them at the flick of a switch. Paradoxically, they really enjoy smoking, all the while

sacrificing their health for it by adapting and not noticing it getting worse

(masochistic sacrificing relationship). Uniquely, whilst there is some

acknowledgement of the reality of the link, smoking and COPD have a less clearly

defined relationship in this viewpoint, particularly around whether it is the cause of

COPD (ambivalence). Cigarettes are companions who would be missed. There is an

indecisive relationship with smoking, one part really wants to leave, but the other

wants to stay an enslaved smoker. There are some justifications made about damage

already being done and feeling somewhat hopeless; although the worsening of

COPD by smoking was not denied, it was not highly believed either, yet there are

still plans to quit and smoking cessation medications are ready on standby; it is as if

one moment there is hope and they will leave, the next minute there is no point and

they must stay. The mind is never made up. The cognitive dissonance seems

prevalent in this factor and instead of resolving, seems to move from one view to the

other. A reluctance to fully believe the relationship to smoking (particularly to the

genesis of their COPD), finding it easier to hide their smoking, and adapt to their

COPD symptoms might function to loosen the association of illness and smoking, which makes it easier to continue in an enslaved relationship, from which one derives pleasure, than to leave.

Non-Loading Sorts and Loneliness

Two people indicated loneliness was a large part of their smoking and did not load onto one factor. Two others, one of whom was just about to attempt to quit smoking, and the other had just started a quit attempt, did not load either. This suggests that people taking some form of action may have another viewpoint to their smoking; however, one participant loading onto factor two had verbalised their plans to quit when they go into hospital for an elective operation.

Relationships to Existing Research

Many of the statements rated positively in this study are supported by existing research from which many of them were derived. For example, people believing it is too late to stop (factors one and three) is well documented by Wilson et al., (2011), Jones, Hyland, Hanney, and Erwin, (2004), Nykvist, Larsson, and Dahlborg Lyckhage, (2014), and Vuong et al., (2016). However, in contrast to the literature, this study did not find evidence of viewpoints that smoking was considered sociable (e.g. Hilberink et al., 2006, Wilson et al., 2011) or the levels of outright denial of links between COPD and smoking seen in some studies (e.g. Bjarnason, Mikkelsen, and Tønnesen, 2010). No evidence was found in the factors that health professionals lack sympathy (van Eerd et al., 2015). Anxiety about smoking leading to further smoking, and concerns about weight-gain (Nykvist et al., 2014) were not demonstrated either, nor were beliefs about smoking preventing

infections (Poureslami et al., 2015). There was no evidence that COPD is perceived as an age-related illness idea or the idea that smoking just irritates the lungs, or that it helps breathing (Schofield et al., 2007)

The viewpoints in this study appear more complex than being reduced into a handful of thought categories; mediators of confrontational counselling (Kotz et al., 2009) were partially supported, as were some of the constructs of the expanded-TPB (Peretti-Watel et al., 2007) and HAPA (Radtke et al., 2012), but beliefs about control and attitudes were often contradictory. All viewpoints had an awareness of the risks of continuing to smoke; however, factors two and three utilise some 'self-exempting' or 'compensatory' beliefs (e.g. cutting down cigarettes, air pollution being worse), but others were absent, such as not needing to quit because of attending Pulmonary Rehabilitation etc. The factors also do not fit neatly onto the TTM model (Prochaska et al., 1992); for example, factor one crudely appears pre-contemplative, but those that loaded had attempted quitting at least three times, and some had a desire to quit. Based on the supplementary desire-to-quit data, it is more accurate to say factor one encompassed people who are pre-contemplative, and all factors encompassed people with some level of contemplation.

Contextual Relevance of Findings

Improvements are underway for people with COPD who have difficulties with anxiety and depression under the Improving Access to Psychological Therapies (IAPT) programme for long-term conditions (Roth & Pilling, 2015); however, there are no competencies listed for psychological practitioners to be able to undertake interventions to help people consider/stop smoking. This study suggests, broadly in line with Tselebis et al., (2016), that psychological formulation with people with

COPD should be idiosyncratic, and inclusive of smoking, rather than treating low mood and anxiety difficulties as separate entities. It may be helpful to work jointly with a smoking cessation specialist; however, this may be challenging as smoking cessation services in the UK have experienced drastic cuts (Cancer Research UK and Action on Smoking Health, 2018). Furthermore, COPD services in the UK also have very varied levels of access to Clinical Psychology input outside of IAPT.

Utility of the findings

This study offers a novel understanding of smoking with COPD by interrogating the maintenance of the behaviour rather than the desire to change it. Contrary to existing socio-cognitive models, it accounts for both contradictions in thoughts, and similarity of views with differing levels of desire to quit. Equally, it recognises idiosyncratic perspectives, whilst illuminating shared latent variables, and accounts for relationships between smoking, anxiety and low mood

The current evidence base for psychological approaches to depression and anxiety in COPD is sparse (Pollok et al., 2016; Usmani et al., 2013), as such joined-up psychological interventions will require careful thought. The utility of an intervention will be guided by the formulation and feedback from the client; to assist with smoking and mental health difficulties, Clinical Psychologists will likely need to draw upon and synthesise multiple methods e.g. CBT, Psychodynamic, Systemic, Attachment Theory etc, as well as models from Health Psychology domains. Processes that could be important for addressing smoking and mental health difficulties might include carefully moving from a stoic position to experiencing emotional arousal, as highlighted in the TTM (Prochaska et al., 1992), but also prevalent in psychodynamic theories (Leiper, 2014). The negative future component

of the cognitive triad (Beck, Rush, Shaw, & Emery, 1979) may link low mood and fatalistic outlooks on smoking; as such, the use of motivational interviewing, CBT/evidence-based reasoning, and careful Socratic questioning (Padesky, 1994) of possible cognitive biases (e.g. still attending pulmonary rehabilitation versus 'it is too late') may be helpful in trying to shift from fatalism to determinism, improve mood, and identify advantages to stopping. Value-based interventions from Acceptance and Commitment Therapy (ACT) have been shown to improve health-related behaviours in chronic pain (Vowles & McCracken, 2008), and might also be useful for people with COPD (Duckworth & Dionne, 2011). Improving self-efficacy via implementation intentions (Armitage, 2016), undertaking behavioural experiments (Bennett–Levy et al., 2004) and challenging procrastination (without which optimism becomes increasingly unrealistic, see Jefferson, Bortolotti, & Kuzmanovic, 2017), might each help reduce passivity. Examining relationship processes, promotion of self-confidence and assertiveness may reduce submission and build a more internal locus of control. Consideration of attachment-style, and parallels in accounts of smoking, may also be important (e.g. factor one appears avoidant of feelings, whereas factor three describes being overly-attached to cigarettes). Evidence-based reasoning, and direct challenge of unrealistic beliefs to reduce ambivalence may also be indicated individually (Kotz et al., 2008), or in group programmes such as pulmonary rehabilitation.

The utility of these techniques will of course depend upon the contract between the Psychologist and the person wanting help, and the broader formulation; a decision balance sheet is likely to be far easier to undertake informally than exploring hidden feelings psychodynamically. Consideration as to the wider relational patterns (including loneliness and grief), and the family and cultural scripts (Dallos & Draper,

2010) is of course warranted and part of psychological formulation; intervention might need to be at a social and community level, or may involve working with respiratory teams to adapt their approaches.

Lastly, it must be respected that people ultimately have the right to smoke and view it as separate to any mental health difficulty they wish to seek help for; psychological practice must remain ethical and respect this choice. Being overt about including smoking in a formulation from the outset would be wise.

Limitations

The sample size was adequate for Q-methodology (Watts & Stenner, 2012); however, the method is abductive, not predictive, and therefore caution should be applied when considering the generalisability of the findings. The sample in this study is homogenous in terms of ethnicity. Two non-exemplar sorts referred to loneliness, a suspected fourth factor may have been identified within a larger sample. Whilst viewpoints regarding depression, anxiety and smoking were independent of HADS scores, this study was cross-sectional, as such it cannot be concluded that viewpoints are fully independent of symptom experience. It may also be that the effectiveness of smoking at reducing depression/anxiety is idiosyncratic to the person. Whilst three distinctive viewpoints have been revealed it is not possible to say whether these are static or change over time, or if indeed they represent stages to do with disease progression and aging. Further analysis of factors may also have been aided by an additional question on intention to quit, and other measures such as time to first cigarette.

Future research

Testing the replicability of these novel findings is important; questionnaires may also be of benefit in reaching a larger group of COPD sufferers (e.g. fatalism, depression and optimism have been measured in Stroke survivors (Morgenstern et al., 2012)). A longitudinal version of this study could also test the stability of viewpoints. Whilst HADS scores were independent of viewpoints, underlying schema (Schmidt, Joiner, Young, & Telch, 1995) and attachment styles (McChargue, Cohen, & Cook, 2004) were not explored; these may warrant investigation. The Q-board was well received by participants as a method of investigation and explaining their smoking; a smaller tool based on this method of sorting cards warrants evaluation as a method of assessment.

Conclusion

Three different viewpoints appear to maintain smoking, with two emphasising the role of smoking in the management of anxiety and depression. More research is needed, and studies in COPD should fundamentally consider mental health when researching smoking, and vice versa.

Disclosure of Interest: None

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Appendix A – Sponsor Ethical Approval

INDEPENDENT PEER REVIEW APPROVAL FEEDBACK

Researcher Name	Clive Chimonides
Title of Study	What thoughts permit people with COPD to continue smoking?
Status of approval:	Approved

Thank you for your request to make an amendment to your previously approved application to the Independent Peer Review Panel (IPR). I note the details of the amendments that were highlighted in your letter addressed to me dated 06 Nov 2017.

Your Application is now approved

Action now needed:

You must now apply to the Local NHS Research Ethics Committee (LREC) for approval to conduct your study. You must not commence the study without this second approval.

Please forward a copy of the letter you receive from the LREC by email to HealthScienceEthics@staffs.ac.uk as soon as possible after you have received approval.

Once you have received LREC approval you can commence your study.

You should note that any divergence from the approved procedures and research method will invalidate any insurance and liability cover from the University. You should, therefore, notify the Panel of any significant divergence from this approved proposal.

When your study is complete, please send the ethics committee an end of study report. A template can be found on the ethics BlackBoard site.

Comments for your consideration: None

Signed: Dr Roozbeh Naemi   **Date: 07.11.2017**

Chair of the Health Sciences Ethics Panel

Appendix B – NHS Research Ethics Committee Favourable Opinion

NHS

Health Research Authority

South Central - Hampshire B Research Ethics Committee
Level 3   Block B
Whitefriars
Lewins Mead
Bristol
BS1 2NT

Telephone: 0207 1048055

> Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

19 February 2018

Mr Clive Chimonides
Staffordshire University
c/o R206, Science Centre
Leek Road, Stoke-on-Trent
ST4 2DE

Dear Mr Chimonides

Study title:	**Psychological exploration of the cognitions preventing smoking cessation or maintaining smoking in Chronic Obstructive Pulmonary Disease (COPD) sufferers: A Q-Methodological Study.**
REC reference:	18/SC/0066
IRAS project ID:	236588

Thank you for your letter of 15 February 2018 , responding to the Committee's request for further information on the above research [and submitting revised documentation].

The further information has been considered on behalf of the Committee by the Vice-Chair together with Professor Colbourn.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further

Appendix C – NHS HRA Approval & Site Expansion Approval

NHS
Health Research Authority

Mr Clive Chimonides
Staffordshire University
c/o R206, Science Centre
Leek Road
Stoke-on-Trent
ST4 2DE

Email: hra.approval@nhs.net

19 February 2018

Dear Mr Chimonides

Letter of HRA Approval

Study title:	Psychological exploration of the cognitions preventing smoking cessation or maintaining smoking in Chronic Obstructive Pulmonary Disease (COPD) sufferers: A Q-Methodological Study.
IRAS project ID:	236588
REC reference:	18/SC/0066
Sponsor	Staffordshire University

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. Please read *Appendix B* carefully, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

From: "AMENDMENTASSESSMENT, Hra (HEALTH RESEARCH AUTHORITY)" <hra.amendmentassessment@nhs.net>
Date: 25 May 2018 at 13:36:17 BST
To: "c001201d@student.staffs.ac.uk" <c001201d@student.staffs.ac.uk>, "n.chockalingam@staffs.ac.uk" <n.chockalingam@staffs.ac.uk>
Cc: "Researchconsortium (WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST)" <wah-tr.researchconsortium@nhs.net>, "AMENDMENTASSESSMENT, Hra (HEALTH RESEARCH AUTHORITY)" <hra.amendmentassessment@nhs.net>
Subject: IRAS 236588. HRA Approval for the Amendment

Dear Mr Chimonides,

Further to the below, I am pleased to confirm **HRA Approval** for the referenced amendment.

You should implement this amendment at NHS organisations in England, in line with the conditions outlined in your categorisation email.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/.

Please contact hra.amendments@nhs.net for any queries relating to the assessment of this amendment.

Kind regards

Chris Kitchen

Assessor

Dr Chris Kitchen

Assessor

Health Research Authority

3rd Floor, Barlow House, 4 Minshull Street, Manchester, M1 3DZ

T. 0207 104 8193

E. hra.approval@nhs.net

W. www.hra.nhs.uk

Our latest guidance on how the upcoming GDPR affects health research is now live.

Sign up to receive our newsletter HRA Latest.

Appendix D - Local NHS R&D Approval Confirmations

From: WALKER, Anna (WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST)
<anna.walker7@nhs.net>
Sent: Tuesday, March 13, 2018 1:30:59 PM
To: CHIMONIDES Clive
Cc: ROWAN, Emma (WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST); NOLAN, Jane
(WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST); COMBES Helen
Subject: IRAS 236588 Confirmation of Capacity and Capability at Worcestershire Acute
Hospitals NHS Trust

Dear Mr Chimonides,

**Re: IRAS 236588 Confirmation of Capacity and Capability at Worcestershire Acute
Hospitals NHS Trust (WAHT)**

**[Psychological exploration of the cognitions preventing smoking cessation or maintaining
smoking in Chronic Obstructive Pulmonary Disease (COPD) suffers; A Q-Methodological
Study]**

This email confirms that Worcestershire Acute Hospitals NHS Trust has the capacity and
capability to host the above referenced study. Please find attached our agreed Statement
of Activities as confirmation.

We agree that research activities in relation to this study may commence on 13th March
2018, as previously discussed. Please refer to the HRA Letter of Approval dated 19th
February 2018 for the latest versions of approved documentation.

I have attached an electronic copy of the Letter of Access that will allow you to undertake
your research activities at WAHT.

Please do not hesitate to contact me if you have any queries regarding this study.

Kind regards

Anna

Anna Walker

Research Support Facilitator

R&D Management Office, Worcestershire Clinical Research Unit, Newtown Road,
Worcester, WR5 1HN

Tel: 01905 760256

Ext: 34789

From: "Grocott Chantel-Lea (RRE) MPFT" <Chantel-Lea.Grocott@mpft.nhs.uk>
Date: 19 June 2018 at 15:56:59 BST
To: "c001201d@student.staffs.ac.uk" <c001201d@student.staffs.ac.uk>, "Chimonides Clive (RRE) MPFT" <Clive.Chimonides@mpft.nhs.uk>
Cc: "Oakley Lisa (RRE) MPFT" <Lisa.Oakley@mpft.nhs.uk>, "Lambley-Burke Ruth J. (RRE) MPFT" <Ruth.Lambley-Burke@mpft.nhs.uk>
Subject: Confirmation of Capacity and Capability at MPFT

Dear Clive

RE: IRAS 216931. Confirmation of Capacity and Capability at MPFT

Full Study Title: 'Psychological exploration of the cognitions preventing smoking cessation or maintaining smoking in Chronic Obstructive Pulmonary Disease (COPD) sufferers: A Q-Methodological Study. (What thoughts permit people with COPD to continue smoking?)'

On behalf of Ruth Lambley-Burke, Head of Research and Innovation, this email confirms that Midlands Partnership NHS Foundation Trust has the capacity and capability to deliver the above referenced study.

I have attached the schedule of events for your information. Can you also complete the delegation log towards the end and return a signed copy to me before you start your recruitment.

If you wish to discuss further, please do not hesitate to contact me; good luck with your study.

Kind Regards

Tilly

Chantel-lea Grocott

Senior Research Administrator

Midlands Partnership NHS Foundation Trust

Research and Innovation Department

Barker Unit,Haywood Hospital

High Lane, Burslem

ST6 7AG

T: 01782 673608

   E: chantel-lea.grocott@mpft.nhs.uk or chantellea.grocott@nhs.net

[INSERT TRUST LOGO]

Participant Information Sheet – Q-Sort

Study Title: What thoughts permit people with COPD to continue smoking?

What is this?

You are being asked to think about taking part in a research study. It aims to find out what thoughts people have that allow them to continue to smoke with COPD. This study is being run by Clive Chimonides, an NHS student at Staffordshire University. Clive also works for South Staffordshire and Shropshire NHS Foundation Trust, as part of the training course.

Before deciding whether to take part you should know what the research will involve, and why it is being done. Please read these sheets and make contact if you have any questions, or if you wish to take part.

Aims of the Research

We want to know how smokers with Chronic Obstructive Pulmonary Disease (COPD) decide not to stop smoking, despite being advised to stop. The aim of the research is to find out more about these thought patterns.

Stopping smoking is one of the best things a person can do to slow down their COPD. Research has not yet found out if beliefs about smoking are the same for people with COPD who smoke, as those who do not have the disease. This study will help to find out how people with COPD decide to continue smoking, and help NHS staff to know more about why some people with COPD still smoke. The results

may also help with future research to improve the health, and quality of life, of people with COPD.

How will the study work?

A list of beliefs found to be held by people who smoke with COPD have been put onto cards. People who still smoke with COPD will be asked to put these cards onto a grid. Each person who smokes with COPD can put the cards in an order that best matches their own thoughts.

Why have I been invited?

As a person with COPD who smokes your help would be really useful in finding out more about how people with COPD decide to continue smoking.

Do I need to take part?

No. You do not have to take part. You are free to choose. If you decide not to take part in this study or withdraw at any time, your current standard of medical care will not be affected in any way.

What will happen if I do take part?

If you choose to take part in this study, the researcher will contact you to arrange to meet with you at a local place that best suits you. This will either be the place you go for your COPD exercises, your local hospital, or at your home. You will be asked to read and sign a consent form. You will be given a copy of this to keep.

You will be asked to read through some cards with statements on them and place them into piles of "agree" "neutral" and "disagree". You will then be asked to place the statements on a grid to show how much you agree or disagree with them. The position of the cards will be written down by the researcher using a coded grid sheet. A photo of the layout of your cards (not of you) will also be taken. You will then be asked a little about your thoughts on the task. A few notes may be made on these. Some basic information about you will be collected including your age, gender, ethnic group. You will also be asked about whether you want to quit

smoking and the number of times you have tried to stop. Your mood levels, and anxiety levels will also be collected using a similar type of sheet that the COPD team uses. If you become distressed or want help after taking part, the researcher will talk to you about options to help you.

What are the risks and benefits of taking part?

There are no direct benefits to you in taking part. By taking part, you are helping to find out how people with COPD continue to smoke. This may help future studies on how to help people who wish to stop smoking.

You might become more aware of your own views on smoking if you were not before. There is a slight risk that thinking about reasons you still smoke might upset you, and cause you emotional stress or anxiety. In the event of this the researcher would be happy to discuss support options. This might include psychological support from your local primary care service or advice on smoking from your COPD team (Your COPD Team phone number is INSERT PHONE NUMBER).

Who will have access to information about me?

The information held on you will be accessed by the research team. All data collected will be made anonymous. Your name will not be used, your data will be given a number instead. Data, from which no one can identify you, will be held by the researchers for up to 10 years for use in future studies. Sheets and forms will be put into the University's secure archive.

You can withdraw your data from the study at any time prior to the end of March 2018. After this the study will be written-up and published. You can ask for your archived data to be removed after this and not used in any future study. Please keep the reference number on your consent form in case you wish to do this.

Who is funding the research?

The research is not funded by any grant, instead it is part of a 3-year Clinical Psychology Doctorate. It has been checked and approved by a University Ethics Panel and an NHS Research Ethics Committee.

Can I see the results of the research?

The results of the study will be available online once finished. Type the following into your browser:

https://www.researchregistry.com/browse-the-registry.html#home/

You will then need to type *what thoughts permit people with COPD to continue smoking* into the search box and press enter. This box is found under 'Registrations' title. You should then see the research listed, click on the 'view' text under the column 'Details'.

What should I do if there is a problem?

If you have concerns about any aspect of this research project please contact the principal researcher Clive Chimonides by email at c001201d@student.staffs.ac.uk. Alternatively you may contact the research supervisor Dr Helen Combes at Staffordshire University on h.a.combes@staffs.ac.uk If you do not wish to speak to the researchers you may contact Patient Advice and Liaison Service (PALS) by telephoning 01785 783026, writing to Patient Advice and Liaison Service (PALS), Freepost WV2103, South Staffordshire and Shropshire NHS Foundation Trust, St George's Hospital, Corporation Street, Stafford, ST16 3AG, or by email sssft.customerservice@nhs.net.

Further questions or wish to take part?

If you want to know more, or would like to take part in this study please contact Clive Chimonides stating your interest to take part with your name and contact details either by:

- **Email c001201d@student.staffs.ac.uk OR**
- **Calling 07379 871 953 and leaving a voice message OR**
- **Completing and Sending the Slip Below in a Sealed Envelope**

- -

IRAS 236588

I am interested in taking part in your research and would like further information please.

Name:

Contact Number: Email Address:

Signature Date

Please send this slip to Clive Chimonides, c/o INSERT TEAM ADDRESS

Appendix F – Consent Form

[INSERT TRUST LOGO]

STAFFORDSHIRE UNIVERSITY

Consent Form: Q-Sort

Study: What thoughts permit people with COPD to continue smoking?

Research Team: Clive Chimonides, Helen Combes, Anna Bogucki

<u>Please initial the "yes" box for each statement to indicate your consent.</u>

1. I confirm that I am a current smoker/quit less than 3 months ago with COPD

   YES [ ]

2. I confirm that I have read and that I understand the participant information sheet (version 2.4). I have had the opportunity to consider the information given, and have asked any questions I had before agreeing to participate and confirm I have had these answered satisfactorily.

   YES [ ]

3. I understand that I am participating voluntarily and that I am free to withdraw at any time prior to presentation of the results/publication in July 2018 without giving any reason and without my rights being affected.

   YES [ ]

4. I understand that anonymised direct quotations may be used in the reporting and/or presentation of the findings, including publication in scientific journals.

   YES [ ]

5. I understand that any identifiable information I provide during the Q-sort process will be removed from any presentations to preserve anonymity.

YES ☐

6. I agree that should I become distressed by participating in the Q-method card placing task the researcher will discuss appropriate support available. I understand that in exceptional circumstances (e.g. if I disclose a risk of significant harm to myself or others) the researcher may speak to my GP/care team about appropriate support.

YES ☐

7. I agree to take part in the above study.

YES ☐

8. I agree to the anonymised raw-data collected in this study to be used in subsequent research projects for up to 10 years.

YES ☐

Participant

Name _____ Signed: _____ Date: _____

Researcher

Name _____ Signed: _____ Date: _____

Participant Copy/File Copy (delete as appropriate)

Reference Number:

Appendix G – Correlation Matrix

QSort	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	**1**	0.27	**0.35**	**0.3**	0.15	**0.42**	0.2	**0.31**	**0.32**	0.13	0.26	0.15	0.13	**0.39**	0.08	**0.32**	0.29	0.24	0.14	0.16	0.25	**0.41**
2		**1**	0.26	0.21	0	0.21	**0.42**	-0.1	**0.32**	-0.1	0.02	0.01	0.13	0.22	0.14	-0	**0.39**	0.08	0.12	0.01	0.13	**0.34**
3			**1**	0.19	0.25	**0.36**	0.27	0.23	**0.5**	0.14	**0.36**	**0.32**	0.05	**0.5**	0.25	0.21	**0.5**	**0.3**	**0.35**	**0.35**	**0.32**	**0.44**
4				**1**	0.26	0.24	0.16	0.2	0.27	0.26	**0.39**	0.09	-0.1	**0.3**	0.07	**0.35**	0.14	**0.3**	0.24	0.1	0.11	0.04
5					**1**	0.17	0.05	0.25	0.22	0.24	**0.3**	0.29	-0.1	0.19	0.2	**0.41**	0.19	0.08	0.15	0.26	**0.34**	0.1
6						**1**	**0.31**	**0.32**	**0.43**	0.24	**0.33**	0.17	0.19	**0.5**	0.07	**0.34**	**0.4**	**0.38**	0.29	**0.32**	**0.38**	0.2
7							**1**	0.23	0.26	0.02	0.11	0.19	**0.35**	**0.35**	0.19	0.11	**0.46**	0.24	0.26	0.13	0.22	**0.32**
8								**1**	0.21	**0.35**	**0.35**	**0.46**	0.26	0.26	0.12	0.09	**0.3**	0.16	0.11	0.23	0.27	0.16
9									**1**	0.15	0.1	**0.35**	-0.1	**0.42**	0.2	0.24	**0.44**	0.15	**0.36**	**0.33**	**0.31**	**0.34**
10										**1**	**0.38**	0.28	0.05	**0.32**	0.14	0.24	0.14	0.22	0.26	0.1	**0.42**	0.08
11											**1**	**0.36**	0.19	0.23	0.19	0.28	0.15	0.24	-0	0.27	0.26	-0
12												**1**	0.21	0.29	0.21	0.09	0.23	0.24	0.03	0.15	0.21	0.1
13													**1**	0.15	0.14	-0.1	0.23	0.2	-0.1	-0.1	0.18	0.01
14														**1**	0.1	0.26	**0.55**	0.24	**0.4**	0.22	**0.51**	**0.42**
15															**1**	0.16	0.12	0.11	0.21	0.27	0.21	0.09
16																**1**	0.1	0.14	0.23	0.18	**0.34**	0.08
17																	**1**	0.24	**0.41**	0.24	**0.51**	**0.54**
18																		**1**	0.24	0.06	0.12	0
19																			**1**	0.11	**0.41**	0.26
20																				**1**	0.19	0.01
21																					**1**	0.25
22																						**1**

(Significant Correlation (Brown, 1980) at p<0.05 r≥0.23 (grey) *and p<0.01 r≥0.3* **(grey bold underline))**

Appendix H – Humphrey's Rule and Rotated Factor Loading

Humphrey's Rule

Inclusion Criteria is Cross Products of Factors Highest Loads > Standard Error

Standard Error = 1 / √No Statements = 1/√73 = 0.117

Factor 1 $(\sqrt{0.7057})^2$ X $(\sqrt{0.6772})^2$ = 0.4779

Factor 2 $(\sqrt{0.4796})^2$ X $(\sqrt{-0.4627})^2$ = 0.221911

Factor 3 $(\sqrt{0.4773})^2$ X $(\sqrt{0.3339})^2$ = 0.15937

Factor Matrix with Defining Sorts Flagged

Participant No.	Factor 1		Factor 2		Factor 3	
1	0.3765		0.2275		0.3139	
2	0.5575	flagged	-0.1347		0.1228	
3	0.56	flagged	0.3745		0.128	
4	0.163		0.2694		0.312	
5	0.0449		0.6878	flagged	-0.0387	
6	0.4432		0.2869		0.368	
7	0.5133	flagged	0.0287		0.3188	
8	0.0932		0.3689		0.4342	flagged
9	0.4978	flagged	0.351		0.0995	
10	0.0137		0.5282	flagged	0.2115	
11	-0.0709		0.5259		0.5226	
12	0.129		0.3678	flagged	0.3042	
13	0.0459		-0.1063		0.5066	flagged
14	0.5779	flagged	0.3183		0.2708	
15	0.1431		0.3031	flagged	0.0921	
16	0.123		0.4647	flagged	0.0928	
17	0.7488	flagged	0.1958		0.1667	
18	0.1796		0.1173		0.4558	flagged
19	0.451	flagged	0.2936		-0.0735	
20	0.1764		0.3837	flagged	-0.0089	
21	0.4179		0.4486		0.1032	
22	0.6559	flagged	0.0274		-0.0113	
%Explained Variance	15		12		8	

Appendix I – Concourse Statements (Q-Set)

No.	Statements
1	I didn't know that smoking caused COPD
2	I know smoking causes and worsens COPD but I do not feel threatened by it
3	Smoking does not cause or worsen COPD
4	Smoking just irritates my chest, it doesn't actually damage anything
5	I accept that smoking is worsening my COPD but it's my responsibility and it's the price I pay
6	COPD is just down to bad-luck
7	COPD is just a part of old-age
8	I got COPD by genetically inheriting it, not from smoking
9	My COPD was caused by the industry I worked in, not from smoking
10	It's my business and my choice to smoke
11	It is not my fault; the dangers of COPD were not known when I started smoking
12	Health Professionals have no sympathy and I feel blamed by them
13	I wouldn't know what to do, the regular habit makes it too difficult to stop smoking
14	Withdrawal symptoms from the addiction make it too unpleasant to stop smoking
15	It has to be my decision in my own mind to stop
16	I wish someone would tell me directly to stop and give me shock about what will happen if I don't
17	I wish smoking was just banned
18	I really enjoy smoking
19	I stop smoking, but coming back home (or another familiar place) just starts me smoking again
20	I am a slave to smoking
21	I am not offered enough support to stop smoking
22	It's easier to deny that I smoke, and just hide it from others
23	Other difficult life-events mean it's never the right time to stop
24	I am too embarrassed to seek help to stop
25	I feel too guilty or ashamed for making myself ill and that makes me want to smoke more
26	I feel inferior for still smoking
27	I don't want to see the doctor
28	I don't have the will-power or self-discipline to stop
29	If I really wanted to stop smoking I could do
30	I plan on stopping in the future some time so it's ok

31	I cut down when I'm not feeling well so that improves things
32	I inhale less smoke when I'm not feeling well so that reduces the damage
33	I wish someone could just flip a switch and make me stop
34	The Doctors have got me better before they can do it again
35	I tend to buy nicotine patches/gum/vaping products in case I want to stop
36	I tend to adapt to my symptoms so I don't notice if my health is getting worse
37	The thought of COPD and quitting smoking makes me so anxious I smoke more
38	I get angry at myself for smoking which just makes me smoke more
39	There are no benefits to stopping smoking
40	It's too late, I am too old and the damage is already done
41	Quitting smoking is dangerous, people get other illnesses or just die if they quit
42	I feel a sense of hopelessness about smoking and my COPD
43	Smoking helps me to digest my food and settle my stomach
44	Smoking helps me go to the toilet
45	Smoking helps me cough up phlegm
46	Smoking keeps infections away
47	Smoking helps me breathe
48	Smoking helps me concentrate
49	Smoking helps me relax and not feel stressed
50	Smoking stimulates me
51	Smoking stops me becoming too anxious
52	Smoking stops me becoming too irritable
53	Smoking stops me becoming depressed
54	If I stop smoking I'll put on too much weight
55	Vaping, nicotine products or smoking medications are ineffective
56	Vaping, nicotine products or smoking medications have too many side-effects
57	If I stop smoking I'll get bored
58	Smoking is sociable and I continue because it's part of my social life
59	Being a smoker is a part of my identity
60	Smoking alleviates loneliness
61	Cigarettes are like friends to me
62	Other people close to me won't give up, so why should I?
63	If I give up smoking I'll mourn my cigarettes

64	You've got to die of something
65	I exercise or attend Pulmonary Rehabilitation so I don't need to stop smoking
66	I've made other changes like eating healthily and cutting alcohol so I don't need to stop smoking
67	The more I am told not to smoke, the more I do smoke
68	Everyone around me smokes so there's no point in stopping as I still inhale their smoke
69	My relative lived to very old age and they smoked all their life
70	I have tried quitting before and it was awful
71	I have cut my smoking right down so there's no need to quit
72	I smoke light cigarettes now they do less damage
73	Air pollution and fumes are far more damaging than smoking

Appendix J – Ideal Factor Arrays

No	Statement	factor 1	factor 2	factor 3	Z-Score variance
1	I didn't know that smoking caused COPD	1	1	3	0.101
2	I know smoking causes and worsens COPD but I do not feel threatened by it	2	0	1	0.073
3	Smoking does not cause or worsen COPD	-6	-4	0	0.676
4	Smoking just irritates my chest, it doesn't actually damage anything	-2	-4	-1	0.076
5	I accept that smoking is worsening my COPD but it's my responsibility and it's the price I pay	4	3	4	0.002
6	COPD is just down to bad-luck	-5	-5	1	0.575
7	COPD is just a part of old-age	-5	-5	-3	0.082
8	I got COPD by genetically inheriting it, not from smoking	-4	-4	0	0.262
9	My COPD was caused by the industry I worked in, not from smoking	-1	0	-1	0.018
10	It's my business and my choice to smoke	5	1	1	0.439
11	It is not my fault; the dangers of COPD were not known when I started smoking	3	5	2	0.282
12	Health Professionals have no sympathy and I feel blamed by them	-2	-1	0	0.088
13	I wouldn't know what to do, the regular habit makes it too difficult to stop smoking	0	1	1	0.02
14	Withdrawal symptoms from the addiction make it too unpleasant to stop smoking	4	3	-1	0.424

15	It has to be my decision in my own mind to stop	5	6	4	0.123
16	I wish someone would tell me directly to stop and give me shock about what will happen if I don't	-6	2	4	1.536
17	I wish smoking was just banned	-1	1	-5	0.851
18	I really enjoy smoking	6	0	6	1.38
19	I stop smoking, but coming back home (or another familiar place) just starts me smoking again	-4	0	2	0.566
20	I am a slave to smoking	0	1	5	0.368
21	I am not offered enough support to stop smoking	-1	2	-3	0.586
22	It's easier to deny that I smoke, and just hide it from others	-5	-3	3	0.999
23	Other difficult life-events mean it's never the right time to stop	1	3	2	0.1
24	I am too embarrassed to seek help to stop	-4	-3	-5	0.032
25	I feel too guilty or ashamed for making myself ill and that makes me want to smoke more	-2	2	-2	0.331
26	I feel inferior for still smoking	1	3	-4	1.004
27	I don't want to see the doctor	3	-2	-3	0.685
28	I don't have the will-power or self-discipline to stop	1	4	2	0.1
29	If I really wanted to stop smoking I could do	2	2	0	0.118
30	I plan on stopping in the future some time so it's ok	-3	4	5	1.178
31	I cut down when I'm not feeling well so that improves things	-2	5	1	0.892
32	I inhale less smoke when I'm not feeling well so that reduces the damage	-3	-4	-2	0.053

33	I wish someone could just flip a switch and make me stop	0	6	6	0.955
34	The Doctors have got me better before they can do it again	-1	0	0	0.083
35	I tend to buy nicotine patches/gum/vaping products in case I want to stop	-4	3	-3	1.036
36	I tend to adapt to my symptoms so I don't notice if my health is getting worse	1	-4	5	1.113
37	The thought of COPD and quitting smoking makes me so anxious I smoke more	-2	-1	0	0.088
38	I get angry at myself for smoking which just makes me smoke more	0	0	-1	0.011
39	There are no benefits to stopping smoking	-4	-5	-4	0.003
40	It's too late, I am too old and the damage is already done	6	-5	3	1.966
41	Quitting smoking is dangerous, people get other illnesses or just die if they quit	1	0	-1	0.062
42	I feel a sense of hopelessness about smoking and my COPD	-1	4	3	0.39
43	Smoking helps me to digest my food and settle my stomach	-1	-3	-3	0.027
44	Smoking helps me go to the toilet	0	-2	-6	0.84
45	Smoking helps me cough up phlegm	2	-1	3	0.423
46	Smoking keeps infections away	-5	-2	-5	0.118
47	Smoking helps me breathe	-3	-3	-6	0.309
48	Smoking helps me concentrate	4	2	1	0.139
49	Smoking helps me relax and not feel stressed	5	5	4	0.057
50	Smoking stimulates me	3	-2	-1	0.549

51	Smoking stops me becoming too anxious	4	2	-3	0.84
52	Smoking stops me becoming too irritable	5	3	2	0.032
53	Smoking stops me becoming depressed	3	4	-5	1.519
54	If I stop smoking I'll put on too much weight	0	-1	-2	0.081
55	Vaping, nicotine products or smoking medications are ineffective	0	0	-2	0.171
56	Vaping, nicotine products or smoking medications have too many side-effects	2	1	1	0.041
57	If I stop smoking I'll get bored	2	-1	-2	0.288
58	Smoking is sociable and I continue because it's part of my social life	-1	-2	-2	0.011
59	Being a smoker is a part of my identity	2	-6	0	1.121
60	Smoking alleviates loneliness	0	-1	0	0.038
61	Cigarettes are like friends to me	2	-3	5	1.363
62	Other people close to me won't give up, so why should I?	-2	-1	-4	0.137
63	If I give up smoking I'll mourn my cigarettes	1	-6	2	1.545
64	You've got to die of something	4	-2	3	0.612
65	I exercise or attend Pulmonary Rehabilitation so I don't need to stop smoking	-3	-3	-4	0.032
66	I've made other changes like eating healthily and cutting alcohol so I don't need to stop smoking	-1	-2	-1	0.034
67	The more I am told not to smoke, the more I do smoke	1	4	-4	1.12
68	Everyone around me smokes so there's no point in stopping as I still inhale their smoke	-2	-1	-1	0.101

69	My relative lived to very old age and they smoked all their life	3	1	1	0.156
70	I have tried quitting before and it was awful	3	5	-2	0.701
71	I have cut my smoking right down so there's no need to quit	0	0	2	0.045
72	I smoke light cigarettes now they do less damage	-3	1	0	0.264
73	Air pollution and fumes are far more damaging than smoking	-3	2	4	0.749

Appendix K - Distinguishing and Consensus Statements
Distinguishing Statements for Factor 1

(P < .05 : Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Z-Score (Z-SCR) are Shown

Statement		factor1 Q-SV	factor1 Z-score		factor2 Q-SV	factor2 Z-score		Factor3 Q-SV	Factor3 Z-score	
40	It's too late, I am too old and the damage is already done	6	1.89	*	-5	-1.439		3	0.955	
10	It's my business and my choice to smoke	5	1.73	*	1	0.365		1	0.277	
48	Smoking helps me concentrate	4	1.2		2	0.68		1	0.291	
50	Smoking stimulates me	3	1.06	*	-2	-0.681		-1	-0.25	
69	My relative lived to very old age and they smoked all their life	3	0.99		1	0.112		1	0.2	
27	I don't want to see the doctor	3	0.86	*	-2	-0.578		-3	-1.093	
61	Cigarettes are like friends to me	2	0.69	*	-3	-0.989		5	1.855	
59	Being a smoker is a part of my identity	2	0.68		-6	-1.821		0	0.014	
57	If I stop smoking I'll get bored	2	0.64	*	-1	-0.274		-2	-0.639	
67	The more I am told not to smoke, the more I do smoke	1	0.36	*	4	1.292		-4	-1.268	
36	I tend to adapt to my symptoms so I don't notice if my health is getting worse	1	0.35	*	-4	-1.183		5	1.385	
44	Smoking helps me go to the toilet	0	0.11	*	-2	-0.802		-6	-2.122	
33	I wish someone could just flip a switch and make me stop	0	0	*	6	2.193		6	1.922	
42	I feel a sense of hopelessness about smoking and my COPD	-1	-0.14	*	4	1.298		3	1.035	
17	I wish smoking was just banned	-1	-0.49		1	0.166		-5	-2.035	
34	The Doctors have got me better before they can do it again	-1	-0.68		0	-0.128		0	-0.029	
31	I cut down when I'm not feeling well so that improves things	-2	-0.78	*	5	1.524		1	0.526	
12	Health Professionals have no sympathy and I feel blamed by them	-2	-0.86		-1	-0.338		0	-0.162	
68	Everyone around me smokes so there's no point in stopping as I still inhale their smoke	-2	-0.96		-1	-0.309		-1	-0.253	
30	I plan on stopping in the future some time so it's ok	-3	-0.97	*	4	1.304		5	1.356	
73	Air pollution and fumes are far more damaging than smoking	-3	-0.99	*	2	0.437		4	1.082	
72	I smoke light cigarettes now they do less damage	-3	-1.03	*	1	0.098		0	0.007	
19	I stop smoking, but coming back home (or another familiar place) just starts me smoking again	-4	-1.08	*	0	-0.066		2	0.762	
16	I wish someone would tell me directly to stop and give me shock about what will happen if I don't	-6	-1.6	*	2	0.566		4	1.321	
3	Smoking does not cause or worsen COPD	-6	-1.82		-4	-1.219		0	0.147	

Distinguishing Statements for Factor 2

(P < .05 : Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Z-Score (Z-SCR) are Shown	Statement	factor1 Q-SV	factor1 Z-score	factor2 Q-SV	factor2 Z-score		Factor3 Q-SV	Factor3 Z-score	
Statement									
11	It is not my fault; the dangers of COPD were not known when I started smoking	11	3	1.04	5	2.01	*	2	0.78	
31	I cut down when I'm not feeling well so that improves things	31	-2	-0.78	5	1.52	*	1	0.526	
67	The more I am told not to smoke, the more I do smoke	67	1	0.36	4	1.29	*	-4	-1.268	
35	I tend to buy nicotine patches/gum/vaping products in case I want to stop	35	-4	-1.29	3	1.1	*	-3	-0.733	
21	I am not offered enough support to stop smoking	21	-1	-0.73	2	0.82	*	-3	-0.871	
16	I wish someone would tell me directly to stop and give me shock about what will happen if I don't	16	-6	-1.6	2	0.57		4	1.321	
25	I feel too guilty or ashamed for making myself ill and that makes me want to smoke more	25	-2	-0.79	2	0.5	*	-2	-0.632	
17	I wish smoking was just banned	17	-1	-0.49	1	0.17		-5	-2.035	
19	I stop smoking, but coming back home (or another familiar place) just starts me smoking again	19	-4	-1.08	0	-0.07		2	0.762	
18	I really enjoy smoking	18	6	2.34	0	-0.22	*	6	2.192	
45	Smoking helps me cough up phlegm	45	2	0.84	-1	-0.51	*	3	0.895	
64	You've got to die of something	64	4	1.15	-2	-0.63	*	3	0.874	
44	Smoking helps me go to the toilet	44	0	0.11	-2	-0.8	*	-6	-2.122	
46	Smoking keeps infections away	46	-5	-1.37	-2	-0.82		-5	-1.64	
61	Cigarettes are like friends to me	61	2	0.69	-3	-0.99	*	5	1.855	
36	I tend to adapt to my symptoms so I don't notice if my health is getting worse	36	1	0.35	-4	-1.18	*	5	1.385	
3	Smoking does not cause or worsen COPD	3	-6	-1.82	-4	-1.22		0	0.147	
40	It's too late, I am too old and the damage is already done	40	6	1.89	-5	-1.44	*	3	0.955	
59	Being a smoker is a part of my identity	59	2	0.68	-6	-1.82	*	0	0.014	
63	If I give up smoking I'll mourn my cigarettes	63	1	0.55	-6	-2.01	*	2	0.695	

Distinguishing Statements for Factor 3

(P < .05 : Asterisk (*) Indicates Significance at P < .01)

	Statement	Statement	factor1 Q-SV	factor1 Z-score	factor2 Q-SV	factor2 Z-score	Factor3 Q-SV	Factor3 Z-score	
61	Cigarettes are like friends to me	61	2	0.69	-3	-0.99	5	1.86	*
20	I am a slave to smoking	20	0	0.08	1	0.22	5	1.43	*
36	I tend to adapt to my symptoms so I don't notice if my health is getting worse	36	1	0.35	-4	-1.18	5	1.39	*
16	I wish someone would tell me directly to stop and give me shock about what will happen if I don't	16	-6	-1.6	2	0.57	4	1.32	
40	It's too late, I am too old and the damage is already done	40	6	1.89	-5	-1.44	3	0.96	*
22	It's easier to deny that I smoke, and just hide it from others	22	-5	-1.38	-3	-0.92	3	0.93	*
19	I stop smoking, but coming back home (or another familiar place) just starts me smoking again	19	-4	-1.08	0	-0.07	2	0.76	
31	I cut down when I'm not feeling well so that improves things	31	-2	-0.78	5	1.52	1	0.53	*
6	COPD is just down to bad-luck	6	-5	-1.41	-5	-1.48	1	0.16	*
3	Smoking does not cause or worsen COPD	3	-6	-1.82	-4	-1.22	0	0.15	*
29	If I really wanted to stop smoking I could do	29	2	0.86	2	0.85	0	0.13	
59	Being a smoker is a part of my identity	59	2	0.68	-6	-1.82	0	0.01	
8	I got COPD by genetically inheriting it, not from smoking	8	-4	-1.29	-4	-1.13	0	-0.13	*
14	Withdrawal symptoms from the addiction make it too unpleasant to stop smoking	14	4	1.06	3	1.04	-1	-0.33	*
70	I have tried quitting before and it was awful	70	3	0.94	5	1.44	-2	-0.53	*
55	Vaping, nicotine products or smoking medications are ineffective	55	0	0.25	0	0.07	-2	-0.7	
51	Smoking stops me becoming too anxious	51	4	1.13	2	0.67	-3	-1	*
67	The more I am told not to smoke, the more I do smoke	67	1	0.36	4	1.29	-4	-1.27	*
26	I feel inferior for still smoking	26	1	0.46	3	0.95	-4	-1.38	*
53	Smoking stops me becoming depressed	53	3	1.06	4	1.27	-5	-1.44	*
17	I wish smoking was just banned	17	-1	-0.49	1	0.17	-5	-2.04	*
44	Smoking helps me go to the toilet	44	0	0.11	-2	-0.8	-6	-2.12	*
47	Smoking helps me breathe	47	-3	-0.96	-3	-1.1	-6	-2.2	*

Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors

All Listed Statements are Non-Significant at P > 0.01, and with * are also Non-Significant at P > 0.05)

#	Statement	Statement	factor1 Q-SV	factor1 Z-score		factor2 Q-SV	factor2 Z-score		Factor3 Q-SV	Factor3 Z-score	
1	I didn't know that smoking caused COPD	1	1	0.367		1	0.27		3	0.99	
2	I know smoking causes and worsens COPD but I do not feel threatened by it	2	2	0.66		0	-0.01		1	0.348	
4	Smoking just irritates my chest, it doesn't actually damage anything	4	-2	-0.867	*	-4	-1.097	*	-1	-0.432	*
5	I accept that smoking is worsening my COPD but it's my responsibility and it's the price I pay	5	4	1.111	*	3	1.18	*	4	1.061	*
7	COPD is just a part of old-age	7	-5	-1.416		-5	-1.58		-3	-0.9	
9	My COPD was caused by the industry I worked in, not from smoking	9	-1	-0.289	*	0	-0.116	*	-1	-0.449	*
12	Health Professionals have no sympathy and I feel blamed by them	12	-2	-0.86		-1	-0.34		0	-0.16	
13	I wouldn't know what to do, the regular habit makes it too difficult to stop smoking	13	0	-0.01	*	1	0.294	*	1	0.281	*
15	It has to be my decision in my own mind to stop	15	5	1.888		6	2.18		4	1.34	
24	I am too embarrassed to seek help to stop	24	-4	-1.177	*	-3	-0.944	*	-5	-1.385	*
29	If I really wanted to stop smoking I could do	29	2	0.86		2	0.85		0	0.13	
32	I inhale less smoke when I'm not feeling well so that reduces the damage	32	-3	-0.963	*	-4	-1.253	*	-2	-0.688	*
34	The Doctors have got me better before they can do it again	34	-1	-0.68		0	-0.13		0	-0.03	
37	The thought of COPD and quitting smoking makes me so anxious I smoke more	37	-2	-0.77		-1	-0.47		0	-0.05	
38	I get angry at myself for smoking which just makes me smoke more	38	0	-0.053	*	0	-0.004	*	-1	-0.246	*
39	There are no benefits to stopping smoking	39	-4	-1.341	*	-5	-1.377	*	-4	-1.254	*
41	Quitting smoking is dangerous, people get other illnesses or just die if they quit	41	1	0.363	*	0	0.021	*	-1	-0.246	*
43	Smoking helps me to digest my food and settle my stomach	43	-1	-0.554	*	-3	-0.959	*	-3	-0.76	*
46	Smoking keeps infections away	46	-5	-1.37		-2	-0.82		-5	-1.64	
49	Smoking helps me relax and not feel stressed	49	5	1.661	*	5	1.524	*	4	1.101	*
52	Smoking stops me becoming too irritable	52	5	1.236	*	3	0.992	*	2	0.797	*
54	If I stop smoking I'll put on too much weight	54	0	0.14		-1	-0.36		-2	-0.53	
56	Vaping, nicotine products or smoking medications have too many side-effects	56	2	0.601	*	1	0.106	*	1	0.384	*
58	Smoking is sociable and I continue because it's part of my social life	58	-1	-0.762	*	-2	-0.721	*	-2	-0.517	*
60	Smoking alleviates loneliness	60	0	-0.073	*	-1	-0.443	*	0	0	*
65	I exercise or attend Pulmonary Rehabilitation so I don't need to stop smoking	65	-3	-1.014	*	-3	-0.816	*	-4	-1.251	*
66	I've made other changes like eating healthily and cutting alcohol so I don't need to stop smoking	66	-1	-0.474	*	-2	-0.707	*	-1	-0.253	*
68	Everyone around me smokes so there's no point in stopping as I still inhale their smoke	68	-2	-0.96		-1	-0.31		-1	-0.25	
71	I have cut my smoking right down so there's no need to quit	71	0	0.194	*	0	0.048	*	2	0.554	*

Appendix L – Post Hoc Tests

SPSS Outputs Shown Below for comparisons of Age Band and Quit Desire by Factor:

Crosstabs

Notes

Output Created		02-AUG-2018 19:58:14
Comments		
Input		
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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.

Syntax		CROSSTABS
		/TABLES=FACTOR BY AGEBAND2
		/FORMAT=AVALUE TABLES
		/STATISTICS=CHISQ
		/CELLS=COUNT
		/COUNT ROUND CELL
		/METHOD=EXACT TIMER(5).
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.21
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	Cells Available	524245
	Time for Exact Statistics	0:00:00.07

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * AGEBAND2	17	100.0%	0	0.0%	17	100.0%

Which Factor * AGEBAND2 Crosstabulation

Count

		AGEBAND2			
		50-59	60-69	70-79	Total
Which Factor	Factor 1	2	0	6	8
	Factor 2	1	5	0	6
	Factor 3	0	0	3	3
Total		3	5	9	17

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	15.111[a]	4	.004	.003	
Likelihood Ratio	19.689	4	.001	.001	
Fisher's Exact Test	13.564			.001	
Linear-by-Linear Association	.099[b]	1	.753	.844	.465
N of Valid Cases	17				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	

Linear-by-Linear Association	.153
N of Valid Cases	

a. 9 cells (100.0%) have expected count less than 5. The minimum expected count is .53.

b. The standardized statistic is .315.

Crosstabs

Notes

Output Created		02-AUG-2018 19:59:00
Comments		
Input	Data	
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	17
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=FACTOR BY QUIT /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.16
	Dimensions Requested	2
	Cells Available	524245
	Time for Exact Statistics	0:00:00.08

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * Desire to quit	17	100.0%	0	0.0%	17	100.0%

Which Factor * Desire to quit Crosstabulation

Count

		Desire to quit			Total
		None	Some	Very	
Which Factor	Factor 1	5	2	1	8
	Factor 2	0	1	5	6
	Factor 3	0	1	2	3
Total		5	4	8	17

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.828[a]	4	.043	.036	
Likelihood Ratio	12.244	4	.016	.040	
Fisher's Exact Test	9.065			.020	
Linear-by-Linear Association	6.377[b]	1	.012	.012	.006
N of Valid Cases	17				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.005
N of Valid Cases	

a. 9 cells (100.0%) have expected count less than 5. The minimum expected count is .71.

b. The standardized statistic is 2.525.

Crosstabs

Notes

Output Created		02-AUG-2018 19:59:55
Comments		
Input	Data	
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	Weight	<none>
	Split File	<none>

	N of Rows in Working Data File	14
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=FACTOR BY AGEBAND2 /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.13
	Dimensions Requested	2
	Cells Available	524245
	Time for Exact Statistics	0:00:00.05

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * AGEBAND2	14	100.0%	0	0.0%	14	100.0%

Which Factor * AGEBAND2 Crosstabulation

Count

		AGEBAND2			
		50-59	60-69	70-79	Total
Which Factor	Factor 1	2	0	6	8
	Factor 2	1	5	0	6
Total		3	5	6	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.278[a]	2	.004	.001	
Likelihood Ratio	15.302	2	.000	.001	
Fisher's Exact Test	11.095			.001	
Linear-by-Linear Association	2.370[b]	1	.124	.180	.114
N of Valid Cases	14				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.086
N of Valid Cases	

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is 1.29.

b. The standardized statistic is -1.540.

Crosstabs

Notes

Output Created		02-AUG-2018 20:00:28
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Input	Data	
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	Split File	<none>

	N of Rows in Working Data File	14
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.

Syntax		CROSSTABS
		
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		  /FORMAT=AVALUE TABLES
		
		  /STATISTICS=CHISQ
		
		  /CELLS=COUNT
		
		  /COUNT ROUND CELL
		
		  /METHOD=EXACT TIMER(5).

Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.13
	Dimensions Requested	2
	Cells Available	524245
	Time for Exact Statistics	0:00:00.07

Case Processing Summary

Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * Desire to quit	14	100.0%	0	0.0%	14	100.0%

Which Factor * Desire to quit Crosstabulation

Count

		Desire to quit			Total
		None	Some	Very	
Which Factor	Factor 1	5	2	1	8
	Factor 2	0	1	5	6
Total		5	3	6	14

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.875[a]	2	.019	.024	
Likelihood Ratio	9.896	2	.007	.024	
Fisher's Exact Test	7.511			.018	

Linear-by-Linear Association	7.251[b]	1	.007	.007	.006
N of Valid Cases	14				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.006
N of Valid Cases	

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is 1.29.

b. The standardized statistic is 2.693.

Warning # 67. Command name: GET FILE

The document is already in use by another user or process. If you make

changes to the document they may overwrite changes made by others or your

changes may be overwritten by others.

Crosstabs

Notes

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Comments		
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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=FACTOR BY AGEBAND2 /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
Resources	Processor Time	00:00:00.05

Elapsed Time	00:00:00.08
Dimensions Requested	2
Cells Available	524245
Time for Exact Statistics	0:00:00.02

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * AGEBAND2	11	100.0%	0	0.0%	11	100.0%

Which Factor * AGEBAND2 Crosstabulation

Count

		AGEBAND2		
		50-59	70-79	Total
Which Factor	Factor 1	2	6	8
	Factor 3	0	3	3
Total		2	9	11

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.917[a]	1	.338	.564	.509
Continuity Correction[b]	.006	1	.936		
Likelihood Ratio	1.434	1	.231	.564	.509
Fisher's Exact Test				1.000	.509
Linear-by-Linear Association	.833[c]	1	.361	.564	.509
N of Valid Cases	11				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Continuity Correction[b]	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.509
N of Valid Cases	

a. 3 cells (75.0%) have expected count less than 5. The minimum expected count is .55.

b. Computed only for a 2x2 table

c. The standardized statistic is .913.

Crosstabs

Notes

Output Created		02-AUG-2018 20:01:58
Comments		
Input	Data	
	Active Dataset	DataSet3
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	N of Rows in Working Data File	11
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.

Syntax		CROSSTABS
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		/FORMAT=AVALUE TABLES
		/STATISTICS=CHISQ
		/CELLS=COUNT
		/COUNT ROUND CELL
		/METHOD=EXACT TIMER(5).
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	Cells Available	524245
	Time for Exact Statistics	0:00:00.08

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * Desire to quit	11	100.0%	0	0.0%	11	100.0%

Which Factor * Desire to quit Crosstabulation

Count

		Desire to quit			Total
		None	Some	Very	
Which Factor	Factor 1	5	2	1	8
	Factor 3	0	1	2	3
Total		5	3	3	11

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.278[a]	2	.118	.182	
Likelihood Ratio	5.253	2	.072	.182	
Fisher's Exact Test	3.968			.121	
Linear-by-Linear Association	3.889[b]	1	.049	.061	.061
N of Valid Cases	11				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	

Linear-by-Linear Association	.055
N of Valid Cases	

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is .82.

b. The standardized statistic is 1.972.

Crosstabs

Notes

Output Created		02-AUG-2018 20:02:45
Comments		
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	N of Rows in Working Data File	9
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=FACTOR BY AGEBAND2 /FORMAT=AVALUE TABLES /STATISTICS=CHISQ /CELLS=COUNT /COUNT ROUND CELL /METHOD=EXACT TIMER(5).
Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.11
	Dimensions Requested	2
	Cells Available	524245
	Time for Exact Statistics	0:00:00.06

Case Processing Summary

Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * AGEBAND2	9	100.0%	0	0.0%	9	100.0%

Which Factor * AGEBAND2 Crosstabulation

Count

		AGEBAND2			Total
		50-59	60-69	70-79	
Which Factor	Factor 2	1	5	0	6
	Factor 3	0	0	3	3
Total		1	5	3	9

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.000[a]	2	.011	.012	
Likelihood Ratio	11.457	2	.003	.012	
Fisher's Exact Test	7.683			.012	
Linear-by-Linear Association	6.125[b]	1	.013	.012	.012
N of Valid Cases	9				

Chi-Square Tests

	Point Probability

Pearson Chi-Square	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.012
N of Valid Cases	

a. 6 cells (100.0%) have expected count less than 5. The minimum expected count is .33.

b. The standardized statistic is 2.475.

Crosstabs

Notes

Output Created		02-AUG-2018 20:03:10
Comments		
Input	Data	C:\Users\Clive\Dropbox\DCli nPsy\Thesis\Data\Write Up SPSS Outputs\Compare 2 and 3.sav
	Active Dataset	DataSet4
	Filter	<none>
	Weight	<none>
	Split File	<none>

	N of Rows in Working Data File	9
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.

Syntax		CROSSTABS
		
		  /TABLES=FACTOR BY QUIT
		
		  /FORMAT=AVALUE TABLES
		
		  /STATISTICS=CHISQ
		
		  /CELLS=COUNT
		
		  /COUNT ROUND CELL
		
		  /METHOD=EXACT TIMER(5).

Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05
	Dimensions Requested	2
	Cells Available	524245
	Time for Exact Statistics	0:00:00.02

Case Processing Summary

Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which Factor * Desire to quit	9	100.0%	0	0.0%	9	100.0%

Which Factor * Desire to quit Crosstabulation

Count

		Desire to quit		Total
		Some	Very	Total
Which Factor	Factor 2	1	5	6
	Factor 3	1	2	3
Total		2	7	9

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.321[a]	1	.571	1.000	.583
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.309	1	.578	1.000	.583
Fisher's Exact Test				1.000	.583
Linear-by-Linear Association	.286[c]	1	.593	1.000	.583
N of Valid Cases	9				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Continuity Correction[b]	
Likelihood Ratio	
Fisher's Exact Test	
Linear-by-Linear Association	.500
N of Valid Cases	

a. 4 cells (100.0%) have expected count less than 5. The minimum expected count is .67.

b. Computed only for a 2x2 table

c. The standardized statistic is -.535.

Appendix M – Questionnaires
[INSERT TRUST LOGO]

AGE?   Declined to say ☐

HOW DO YOU DESCRIBE YOUR GENDER?   Declined to say ☐

WHAT WOULD DESCRIBE AS YOUR ETHNICITY?   Declined to say ☐

HOW MUCH DO YOU WISH TO QUIT SMOKING CURRENTLY?

 NOT AT ALL / SOMEWHAT / VERY MUCH

HOW MANY TIMES HAVE YOU ATTEMPTED TO QUIT PREVIOUSLY?

REFERENCE NUMBER:

INSERT TRUST LOGO

Hospital Anxiety and Depression Scale (HADS)

Instructions: Read each item and circle the reply which comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.

I feel tense or 'wound up':	A
Most of the time	3
A lot of the time	2
Time to time, occasionally	1
Not at all	0

I feel as if I am slowed down:	D
Nearly all of the time	3
Very often	2
Sometimes	1
Not at all	0

I still enjoy the things I used to enjoy:	D
Definitely as much	0
Not quite so much	1
Only a little	2
Not at all	3

I get a sort of frightened feeling like 'butterflies in the stomach':	A
Not at all	0
Occasionally	1
Quite often	2
Very often	3

I get a sort of frightened feeling like something awful is about to happen:	A
Very definitely and quite badly	3

I have lost interest in my appearance:	D
Definitely	3

Yes, but not too badly	2
A little, but it doesn't worry me	1
Not at all	0

I don't take as much care as I should	2
I may not take quite as much care	1
I take just as much care as ever	0

I can laugh and see the funny side of things:	D
As much as I always could	0
Not quite so much now	1
Definitely not so much now	2
Not at all	3

I feel restless as if I have to be on the move:	A
Very much indeed	3
Quite a lot	2
Not very much	1
Not at all	0

Worrying thoughts go through my mind:	A
A great deal of the time	3
A lot of the time	2
From time to time but not too often	1
Only occasionally	0

I look forward with enjoyment to things:	D
A much as I ever did	0
Rather less than I used to	1
Definitely less than I used to	3
Hardly at all	2

I feel cheerful:	D
Not at all	3
Not often	2
Sometimes	1
Most of the time	0

I get sudden feelings of panic:	A
Very often indeed	3
Quite often	2
Not very often	1
Not at all	0

I can sit at ease and feel relaxed:	A
Definitely	0
Usually	1
Not often	2
Not at all	3

I can enjoy a good book or radio or TV programme:	D
Often	0
Sometimes	1
Not often	2
Very seldom	3

Appendix N - Journal Submission Guidelines

Instructions for authors

Thank you for choosing to submit your paper to us. These instructions will ensure we have everything required so your paper can move through peer review, production and publication smoothly. Please take the time to read and follow them as closely as possible, as doing so will ensure your paper matches the journal's requirements. For general guidance on the publication process at Taylor & Francis please visit our Author Services website.

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This journal uses ScholarOne Manuscripts (previously Manuscript Central) to peer review manuscript submissions. Please read the guide for ScholarOne authors before making a submission. Complete guidelines for preparing and submitting your manuscript to this journal are provided below.

Contents

- About the Journal
- Peer Review
- Preparing Your Paper
-
  o Structure
  o Word Limits
  o Style Guidelines

About the Journal

Psychology & Health is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's [Aims & Scope](#) for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

Psychology & Health accepts the following types of article: Article, Editorial, Commentary.

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Preparing Your Paper

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Word Limits

Article and Editorial: 30 Pages
Commentary: 1000 words.

Style Guidelines

Please refer to these quick style guidelines when preparing your paper, rather than any published articles or a sample copy.

Please use British (-ise) spelling style consistently throughout your manuscript.

Please use single quotation marks, except where 'a quotation is "within" a quotation'. Please note that long quotations should be indented without quotation marks.

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Papers may be submitted in Word format. Figures should be saved separately from the text. To assist you in preparing your paper, we provide formatting template(s).

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Checklist: What to Include

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the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. Read more on authorship.

2. Should contain a structured abstract of 200 words. Objective, Design, Main Outcome Measures, Results, Conclusion.
3. You can opt to include a **video abstract** with your article. Find out how these can help your work reach a wider audience, and what to think about when filming.
4. Read making your article more discoverable, including information on choosing a title and search engine optimization.
5. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:
   For single agency grants
   This work was supported by the [Funding Agency] under Grant [number xxxx].
   For multiple agency grants
   This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].
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Updated 23-05-2018

WHAT THOUGHTS PERMIT PEOPLE TO CONTINUE TO SMOKE WHEN SUFFERING FROM COPD?

EXECUTIVE SUMMARY

CLIVE CHIMONIDES

WHY WAS THIS PROJECT UNDERTAKEN?

! Smoking is the leading cause of COPD (1)

! The only proven way to slow the progress of COPD is to stop smoking (1)

! Around 3 out of 10 people with COPD still smoke (2)

! Smoking is linked to higher rates of depression, anxiety and death for people with COPD (3)

→ Current methods for helping people with COPD to stop smoking work as well as each-other (4)

→ It is not known whether people who smoke with COPD have different needs to those without COPD (4)

→ People can struggle with competing thoughts about stopping smoking, but somehow decide to continue (5)

→ Research has found some of the thoughts people with COPD have about smoking, but it is not known how people decide to continue smoking with COPD (6)

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WHAT WAS DONE?

→ The scientific evidence was searched to find out what was already known about reasons people give for not quitting smoking with COPD, 52 reasons were identified

→ We wanted to know which reasons are held together as viewpoints

It's too late to stop smoking the damage is done

I plan on stopping in future one day
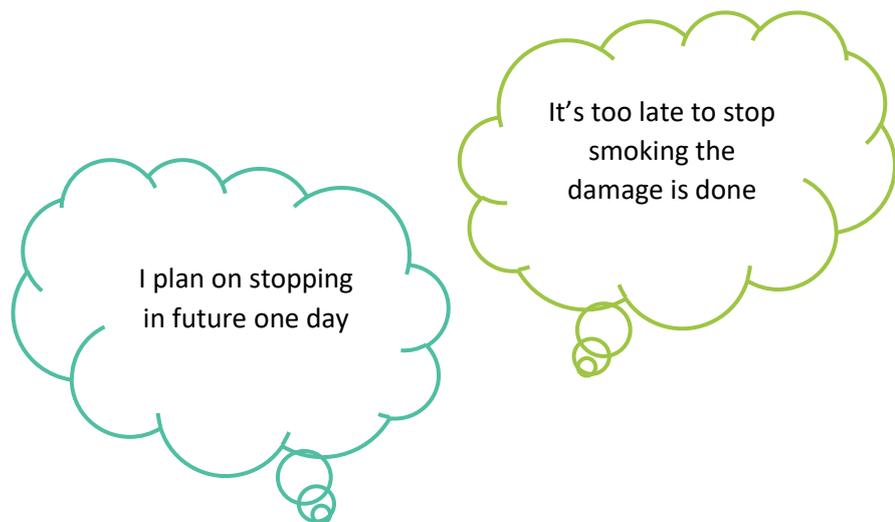
→ Approval from Staffordshire University and NHS Ethics panels was granted to use Q-Methodology to find out

→ The 52 reasons found were checked with other Psychologists, people with COPD, and NHS staff working with COPD

→ Another 21 reasons were found from talking to these people

→ The total of 73 reasons were printed onto plastic cards

→ People with COPD who smoke were asked by NHS staff, if they wanted to take part in this study. An online version of the study was advertised on Facebook™ and Twitter™

→ People who were very ill or with dementia were not asked to take part to protect them, as we could not be certain that they would be able to understand what they were agreeing to

→ Q-Methodology involves placing cards on a grid by level of agreement

→ 22 people took part, 18 of them face-to-face

→ The 18 people completed some questionnaires and sorted the plastic cards into agree/not sure and disagree piles

→ The cards were put onto a pyramid-shaped grid to show what they believed (see picture below)

- ➔ The other 4 people did the same thing using a special website on their computer
- ➔ People were also asked to comment about how they sorted the cards
- ➔ Each pyramid of cards showed a person's view about why they still smoke with COPD
- ➔ Each view was compared to the other 21 views using a computer program
- ➔ The program produced ideal viewpoints that represented the shared view of some of the people who took part (see next diagram for an example computerised diagram)

An example of a Q-sort as recorded by the computer program

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
3. Smoking does not cause or worsen COPD	55. Vaping, nicotine products or smoking medications are ineffective	65. I exercise or attend Pulmonary Rehabilitation so I don't need to stop smoking	58. Smoking is sociable and I continue because it's part of my social life	66. I've made other changes like eating healthily and cutting alcohol so I don't need to stop smoking	34. The Doctors have got me better before they can do it again	16. I wish someone would tell me directly to stop and give me shock about what will happen if I don't	31. I cut down when I'm not feeling well so that improves things	54. If I stop smoking I'll put on too much weight	33. I wish someone could just flip a switch and make me stop	61. Cigarettes are like friends to me	49. Smoking helps me relax and not feel stressed	42. I feel a sense of hopelessness about smoking and my COPD
43. Smoking helps me to digest my food and settle my stomach	50. Smoking stimulates me	51. Smoking stops me becoming too anxious	40. It's too late, I am too old and the damage is already done	69. My relative lived to very old age and they smoked all their life	44. Smoking helps me go to the toilet	62. Other people close to me won't give up, so why should I?	48. Smoking helps me concentrate	64. You've got to die of something	21. I am not offered enough support to stop smoking	1. I didn't know that smoking caused COPD	15. It has to be my decision in my own mind to stop	18. I really enjoy smoking
	67. The more I am told not to smoke, the more I do smoke	59. Being a smoker is a part of my identity	70. I have tried quitting before and it was awful	27. I don't want to see the doctor	23. Other difficult life-events mean it's never the right time to stop	60. Smoking alleviates loneliness	41. Quitting smoking is dangerous, people get other illnesses or just die if they quit	13. I wouldn't know what to do, the regular habit makes it too difficult to stop smoking	22. It's easier to deny that I smoke, and just hide it from others	52. Smoking stops me becoming too irritable	5. I accept that smoking is worsening my COPD but it's my responsibility and it's the price I pay	
	47. Smoking helps me breathe	10. It's my business and my choice to smoke	9. My COPD was caused by the industry I worked in, not from smoking	68. Everyone around me smokes so there's no point in stopping as I still inhale their smoke	6. COPD is just down to bad-luck	32. I inhale less smoke when I'm not feeling well so that reduces the damage	2. I know smoking causes and worsens COPD but I do not feel threatened by it	30. I plan on stopping in the future some time so it's ok	36. I tend to adapt to my symptoms so I don't notice if my health is getting worse	20. I am a slave to smoking	29. If I really wanted to stop smoking I could do	
		17. I wish smoking was just banned	7. COPD is just a part of old-age	4. Smoking just irritates my chest, it doesn't actually damage anything	46. Smoking keeps infections away	14. Withdrawal symptoms from the addiction make it too unpleasant to stop smoking	71. I have cut my smoking right down so there's no need to quit	72. I smoke light cigarettes now they do less damage	11. It is not my fault, the dangers of COPD were not known when I started smoking	56. Vaping, nicotine products or smoking medications have too many side-effects		
			24. I am too embarrassed to seek help to stop	57. If I stop smoking I'll get bored	35. I tend to buy nicotine patches/gum/vaping products in case I want to stop	53. Smoking stops me becoming depressed	12. Health Professionals have no sympathy and I feel blamed by them	19. I stop smoking, but coming back home (or another familiar place) just starts me smoking again	73. Air pollution and fumes are far more damaging than smoking			
				8. I got COPD by genetically inheriting it, not from smoking	37. The thought of COPD and quitting smoking makes me so anxious I smoke more	45. Smoking helps me cough up phlegm	28. I don't have the will-power or self-discipline to stop	63. If I give up smoking I'll mourn my cigarettes				
					39. There are no benefits to stopping smoking	25. I feel too guilty or ashamed for making myself ill and that makes me want to smoke more	38. I get angry at myself for smoking which just makes me smoke more					
						26. I feel inferior for still smoking						

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WHAT WAS FOUND?

➔ 17 out of 21 people held 1 of 3 distinct viewpoints – the
table below shows the statements people most strongly
agreed with and disagreed with by the 3 groups

Factor (Viewpoint)	No. of People	Statements Most Strongly Agreed With	Statements Most Strongly Disagreed With
1	8	✓ It's too late I am too old, and the damage is done (+6) ✓ I really enjoy smoking (+6)	✗ Smoking does not cause or worsen COPD (-6) ✗ I wish someone would tell me directly to stop and give me a shock about what will happen if I don't (-6)
2	6	✓ It has to be my decision in my own mind to stop (+6) ✓ I wish someone could flip a switch and make me stop (+6)	✗ Being a smoker is part of my identity (-6) ✗ If I give up smoking I'll mourn my cigarettes (-6)
3	3	✓ I really enjoy smoking (+6) ✓ I wish someone could just flip a switch and make me stop (+6)	✗ Smoking helps me to breathe (-6) ✗ Smoking helps me go to the toilet (-6)

➜ The remaining 5 people shared more than 1 viewpoint

➜ The people represented in each of the 3 viewpoints did not differ in terms of average anxiety or depression levels, nor in terms of gender

➜ People with the 1st viewpoint were generally older than people with the 2nd and 3rd viewpoints

➜ The people who had no interest in stopping smoking only held the 1st viewpoint

➜ 2 of the remaining 5 people (who did not load onto 1 factor) gave loneliness as one of the reasons for still smoking

The diagram below shows how statements were unique to, or shared by, each factor. Where the circles overlap this represents a shared view, where they do not this indicates what makes the viewpoint unique

Smoking Alleviates Loneliness?

Factor 3:

I am a slave to smoking, cigarettes are like friends to me, and I adapt to my symptoms so I do not notice my health getting worse. It is easier to deny I smoke and just hide it. I'm not sure what caused my COPD

Consensus 1 & 3
I really enjoy smoking, and it helps me to cough up phlegm. You have got to die of something.

Consensus 2 & 3:
I wish someone would give me a shock, or just flip a switch. I feel hopeless about smoking. I don't have the will-power, but I plan on stopping in future so it is ok.

Consensus All Factors:

Smoking helps me to relax not feel stressed and irritable. I accept that smoking is worsening my COPD. Quitting has to be my own decision. I am not embarrassed to seek help.

Factor 1:

It's too late to stop smoking the damage is done. It is my choice and my business to smoke. It is part of my identity. It stimulates me. I do not plan on stopping, I do not want to see the doctor, and I don't want to be shocked about what will happen

Factor 2:

Smoking is not a part of my identity, I'm not sure if I even enjoy it. I cut down when I feel unwell and buy alternatives, but I feel guilty, and lack the support to stop smoking. Telling me to stop just makes me smoke more

Consensus 1 & 2:
Smoking stops me becoming depressed and anxious, and helps me to concentrate. Withdrawal symptoms are too unpleasant, but I could stop if I really wanted to

Disagreed with by all Factors:

COPD is just a part of old-age. There are no benefits to stopping smoking. I am too embarrassed to seek help to stop. I inhale less smoke when I'm not feeling well so that reduces the damage. Smoking helps me to breathe. I exercise or attend Pulmonary Rehabilitation so I don't need to stop smoking. Smoking is sociable and I continue because it's part of my social life

WHAT DOES THIS MEAN?

Factor	Name	Cambridge Dictionary Definition of Name	Explanation of Factor
1	Stoic Fatalism	*Stoicism:* *the quality of experiencing pain or trouble without complaining or showing your emotions:* *Fatalism:* *the belief that people cannot change the way events will happen and that events, especially bad ones, cannot be avoided*	People with this viewpoint accept that COPD is related to smoking and say that smoking prevents anxiety and low mood. Difficulties with addiction are also stated and smoking is a part of person's identity. The view is that continuing to smoke is the business and choice of the person with COPD, and they do not want to be shocked about what will happen, suggesting they do not wanting to stir up feelings (*Stoicism*). People with this view also say that the damage from smoking is already done, and that you have to die of something, meaning they think nothing can really be done (*Fatalism*) which justifies choosing to continue enjoying smoking.
2	Optimistic Passivity	*Optimism:* *the quality of being full of hope and emphasizing the good parts of a situation, or a belief that something good will happen* *Passive:* *not acting to influence or change a situation; allowing other people to be in control*	People with this viewpoint accept that COPD is related to smoking and, like factor 1, think that smoking prevents anxiety and low mood. However, people with this view do not particularly like smoking, and smoking is not a part of their identity. There is a desire to quit, and they are positive that it is not too late as there will be benefits to quitting (*Optimism*). There is a feeling of guilt. By cutting down smoking when unwell, smoking lighter cigarettes, buying nicotine replacement therapy, planning on quitting in future, and thinking that it is never being the right time, they put off quitting. The wish that someone could flip a switch, or shock them into stopping is there, but when they are told to stop they just smoke more. This takes a step back from an active and determined position to quit (*Passivity*).
3	Ambivalent Masochism	*Ambivalent:* *having two opposing feelings at the same time, or being*	People with this viewpoint have some positive thoughts about it not being too late to stop and plan to quit, but also that it also might be too late – the mind cannot be made up. They seem to accept that smoking is probably making it worse, but also have

		uncertain about how you feel	some doubts about smoking causing their COPD (*Ambivalent*).
		Masochism: *(informal)* *the enjoyment of an activity or situation that most people would find very unpleasant*	People with this view are not worried about withdrawal symptoms from smoking but describe themselves as slaves to cigarettes. They would desperately like someone to be able to stop this magically, but just as strongly really enjoy smoking; control remains with the cigarettes and the harm is adapted to *(Masochism)*.

➔ The 3 viewpoints are more complex than (and differ from) the traditional categories of smoker: pre-contemplative, contemplative and preparing to quit (7)

➔ Some people who had some interest in stopping still held Stoic Fatalistic views – just because they saw it as their fate did not mean they were not thinking about quitting smoking

➔ 2 of the 3 viewpoints expressed showed people believed that smoking prevents them from becoming anxious or depressed despite no differences in anxiety and depression levels between people with different views

➔ No evidence found that people who held the 3 viewpoints believed that Pulmonary Rehabilitation made up for the damage from smoking

➔ No evidence was found that smoking was seen as part of people's social life

HOW DO WE USE THESE RESULTS?

→ People with a Stoic Fatalistic viewpoint may need help to find reasons to stop smoking and perhaps face difficult feelings

→ People with a Passive Optimistic viewpoint may need help to put their plans into action and to check whether their current ideas and strategies are helpful or not

→ People with an Ambivalent Masochistic viewpoint may need help with making an informed decision and building self-control

→ Many people with COPD may need help with anxiety and depression at the same time as trying to stop smoking

→ Psychologists and other professionals working with people with COPD need to consider mental health and smoking as often being related

→ However, there are still many unanswered questions and further research is needed…

- **?** This was a small study; we do not know how widespread these viewpoints are, this would require further research
- **?** Although ages differed by viewpoint, we do not know if a person's view of their reasons for smoking changes as they get older or their COPD gets worse, this needs more research
- **?** We do not know if people with COPD who believe smoking prevents depression and anxiety actually experience increased distress when changing their habit

If you would like further information on the study please email Dr Helen Combes
h.a.combes@staffs.ac.uk

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