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Alienation and/or anomie in pharmacists: a narrative systematic review.

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BMJ Open Alienation and/or anomie in pharmacists: a protocol for a narrative systematic review

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ABSTRACT

Introduction Episodes of alienation and/or anomie in pharmacists have been reported in historical accounts since the 19th century. Alienation and anomie are distinct types of psychological or social ills where people are problematically separated from, or their skills and values are misaligned with, others and their environment. Alienation and/or anomie can be important precursors of many negative work experiences, including job dissatisfaction, burnout and/or intention to leave.

Methods and analysis We aim to study alienation and/or anomie in pharmacists from across the globe, reviewing all types of methodological designs, published in peer-reviewed journals, including all primary qualitative, quantitative and/or mixed-method research studies. We will narratively describe any focuses, causes, associated factors and/or consequences of alienation and/or anomie. We will identify all published peer-reviewed research by searching seven electronic databases (MEDLINE, Embase, APA PsychINFO, CINAHL Plus, Cochrane Library, Web of Science Core Collection and Scopus) and Google Scholar in May 2024. Extensive hand and citation-searching will also take place. Two independent reviewers will identify eligible studies, conduct a critical appraisal of the study conduct, extract data and synthesise reported findings by narratively exploring relationships within and between studies. The synthesis will follow a hybrid thematic analysis. Initially, we will deductively structure the findings according to six themes from underpinning alienation and anomie theory: Care, Values, Meaning, Recognition, Autonomy and Shared Responsibility. This structure may thereafter be inductively adapted, by creating new additional themes, if required from the data. A GRADE Confidence in the Evidence from Reviews of the Qualitative research approach will be used to determine a confidence profile of each theme. A thematic map showing the links between themes will also be produced.

Ethics and dissemination Ethical permission is not required, as this study uses data from published research. Dissemination will be through publication in peer-reviewed journals and conference presentations.

PROSPERO registration number CRD42024536336.

INTRODUCTION

The concept of alienation identifies a distinct type of psychological or social ill; namely, one involving a problematic

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This systematic review, with narrative synthesis, will allow the authors to analyse the relationships within and between studies of different methodological designs and will give an overall assessment of the confidence of the evidence.
- ⇒ The robust search strategy, including extensive hand/citation searching and the use of synonyms/antonyms, will increase the potential capture of relevant studies.
- ⇒ The collaboration between pharmacists and an academic philosophy department will strengthen the theoretical understanding and analytical underpinning of alienation in the study.
- ⇒ The scarcity of existing publications and linguistic challenges around the how 'alienation' and 'anomie' are described, or not, in the existing literature may be the main limitations of the study.

separation between a person and other persons or things that ideally belong together.¹ Alienation can be subjective, based on the feelings of the individual, or objective, based on the environments and structures around an individual, even if the individual does not subjectively feel alienated,¹ or both. Various philosophers, both historical and contemporary, have defined and furthered our understandings of alienation, drawing on accounts of the following related concepts^{2–5}:

- a. Care, in its broadest sense, entails being reliably motivated to do what one can to meet needs.
- b. One's values are what one cares about caring about.
- c. Meaningfulness entails doing what one cares about and which oneself and/or one's community also values.⁶
- d. Recognition of others and oneself is manifest approval or disapproval, based on one's values.⁷
- e. Autonomy is being empowered to act in the light of one's values.⁷



f. Sharing responsibility is the state of caring about things together in a way that involves group deliberation about the means to our shared ends.

General philosophical theories of alienation vary with which of these concepts individuals or communities are problematically separated from.

Anomie is a specific form of alienation, characterised by the disintegration of the standards or norms, which had previously been common to a society or community.⁸ Anomie results from a lack of congruence between an individual's values or abilities and those of the prevailing norms.^{8,9} Durkheim identifies two major causes of anomie: the division of labour and rapid social, political or economic change.^{8,9} Habermas further explains anomie as a misalignment of three structural components of the 'lifeworld': culture, society and personality.¹⁰ Anomie is often a transition phase where previous standards and norms are no longer valid, but new ones have not yet fully evolved.⁹ An increasing division of labour within a profession can weaken the sense of self-identification with others.⁹ Such a lack of a coherent identity in pharmacists is well characterised,¹¹ catalysed by the rapid change in the role of the pharmacist from traditional dispensing and supply duties to more patient-facing clinical roles.¹² Skills segregated in the workplace may also weaken solidarity in pharmacists.¹³

The notion of alienation and/or anomie in pharmacists is not necessarily new. Accounts of alienation and/or anomie in the historical pharmacy literature appear from the 19th century, including cases linked to the changing role and identity of pharmacists in France,¹⁴ and failed attempts to achieve full professionalisation in the USA.¹⁵ A lack of social acceptance as a true profession, a lack of congruence between the role of pharmacists and the training undertaken, a lack of professional autonomy, a skewed focus on medications rather than people, an unclear professional purpose and a lack of professional harmony have been suggested in 20th century commentaries as additional mechanisms of alienation in pharmacists.^{16,17} Recently, the *Collaborative Care Model* has theorised that the segregation of four key skills in the pharmacist workforce (clinical practice, leadership, education and research) can also lead to reduced professional agency, dissonance and ultimately alienation and/or anomie.¹³ It has been claimed that 'pharmacy perceives itself as the quintessential professional exemplar of untapped potential, underutilised skill, and systematic underappreciation' and that 'these are classic markers of an alienated profession'.¹⁸

Research into alienation and/or anomie in doctors and nurses is becoming more prevalent in the academic literature.^{19–23} Alienation and/or anomie in a healthcare workforce can precipitate significant strategic problems, including aspects of job dissatisfaction, acquiescence and depersonalisation.^{19,20} Alienation may be an important precursor of many negative work experiences, including sickness/stress absence, the intention of leave and/or 'burnout'.¹⁹ Previous systematic reviews in pharmacy

have studied the endpoints of intention to leave²⁴ and 'burnout',²⁵ and there is also previous work on job dissatisfaction.^{26,27} Alienation can also have positive effects, for example, when frustrated individuals strive to deliver positive change.¹⁹ Little has been synthesised about the overall evidence-based surrounding the focuses, causes, associated factors and/or consequences of alienation and/or anomie in pharmacists.

AIMS AND OBJECTIVES

The aim of this systematic review is to deliver a narrative synthesis of primary peer-reviewed published research accounts of alienation and/or anomie in pharmacists.

The objectives are to:

- ▶ Identify all published primary peer-reviewed research accounts describing alienation and/or anomie in pharmacists.
- ▶ Produce a descriptive and critical analysis of the studies.
- ▶ Narratively explore relationships within and between studies, looking at the focuses, causes, associated factors and/or consequences of alienation and/or anomie in pharmacists
- ▶ Assess the robustness and confidence of the narrative synthesis.

These objectives follow the structure of the guidance on the Conduct of Narrative Synthesis in Systematic Reviews.²⁸ A meta-analysis will not be undertaken due to different methodological study types and study outcomes included in the synthesis.

METHODS AND ANALYSIS

A systematic review methodology has been chosen to deliver an exhaustive and comprehensive search of the existing evidence.²⁹ The narrative approach will allow multiple evidence types to be synthesised into a single complex descriptive story.²⁸

This systematic review will follow the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).³⁰ The protocol for this study has been registered in PROSPERO (CRD42024536336), and the ongoing status of the project will be tracked and updated in PROSPERO.

We have structured the inclusion criteria for our question around the acronym SPIDER: Sample, Phenomenon of Interest, Design, Evaluation and Research type.³¹

Inclusion criteria

Sample

The population we will study is international pharmacists. This will include anyone described as a pharmacist in each study (usually meaning they are registered to practice pharmacy in their respective country) and may include any job/role or sector of care (eg, community pharmacy, hospital pharmacy, primary care pharmacy, leadership roles, etc).

Box 1 : What are alienation and/or anomie and why are they important to pharmacists?

There are many theories of what 'alienation' is. (1) We can ignore subtle differences to present the following logical structure common to many. Alienation is the remoteness or separation, which arises when some structural or social factor inhibits an agent's ability to appropriately relate to something. This typically leads to a negative psychological endpoint for the agent. Accordingly, in this study, we plan to explore how pharmacists are alienated from other individuals, themselves, their work or the public at large [focus] when relations to care, values, meaning, recognition, autonomy or shared responsibility [theme] are inhibited by structural or social factors [cause]. In the case of pharmacists, this may lead to distress, burnout and job dissatisfaction, among other sequelae [consequence]. Anomie is an instance of alienation in which agents are inhibited by ill-fitting social expectations, for instance, when clinicians are treated as shop assistants.

Many forms of alienation may be present at the same time. As the logic suggests, a pharmacist might be alienated from their patients, for instance, if prevailing rules or expectations mean they are unable to care for them to the best of their ability; this might in turn lead to them being alienated from themselves in virtue of being unable to live in accordance with their own values; this might further lead to them being alienated from their work since it fails to use their developed skills; and generally to them being alienated from the wider population, who fail to recognise their vocational potential. Alienation, by this logic, has a social cause; consequently, it also admits, at least in principle, of a social solution.

Phenomenon of Interest

The phenomenon we will study is alienation and/or anomie. **Box 1** shows how the authors define alienation and/or anomie and also explains why these topics should be important to pharmacists.

Design

We will study all types of methodological designs, published in peer-reviewed journals.

Evaluation

The main outcomes that we intend to look for are the focuses, causes, associated factors and/or consequences of alienation and/or anomie in pharmacists.

Research Type

We will study all primary qualitative, quantitative and/or mixed-method research studies that study (by design), describe (in the results) or discuss (based on the results) aspects of alienation and/or anomie in pharmacists.

Studies that describe alienation and/or anomie in multiple different professional groups will be allowed, as long as pharmacists are included in the cohort. Where studies are unclear whether pharmacists were included, the corresponding author of such studies will be contacted to clarify, before inclusion.

Exclusion criteria

The following criteria will be used for excluding a study from the final results:

- ▶ Non-English sources.

- ▶ Systematic reviews, as they are not primary research.
- ▶ Sources describing alienation and/or anomie only involving student pharmacists (ie, pre-registration), but not fully qualified or registered pharmacists
- ▶ Sources describing alienation and/or anomie involving only pharmacy technicians or pharmacy support workers, but not pharmacists.
- ▶ Sources describing patients experiences of alienation and/or anomie from pharmacists (NB-pharmacists experiences of alienation and/or anomie from pharmacists will be allowed)
- ▶ Conference abstracts without full-text papers

Non-research papers describing alienation and/or anomie (eg, review articles, expert commentary, editorials articles, university theses, grey literature and other sources, such as books, blogs, etc) discovered in the literature search will not formally be included in the narrative synthesis but may be used as context for the final paper (eg, the discussion section).

Patient and public involvement

Patients and the public were not involved in the design, conduct or reporting and dissemination plans of this study.

Information sources

Seven different conventional academic databases will be searched, due to differences in the content and controlled vocabulary, especially around alienation and anomie, to ensure the systematic review search is comprehensive. The following databases will be searched:

- ▶ MEDLINE (Ovid)
- ▶ Embase (Ovid)
- ▶ APA PsychINFO (Ovid)
- ▶ CINAHL Plus (EBSCO)
- ▶ Cochrane Library (Wiley)
- ▶ Web of Science Core Collection (Clarivate)
- ▶ Scopus (Elsevier)

No time limitations will be placed on the search from these databases.

Google Scholar (Google) will be used as an additional source to augment the standard electronic databases and increase the likelihood of identifying potentially suitable studies. Private browsing mode will be used to negate the influence of cookies and previous search histories influencing the results. Google Scholar may produce almost limitless results, however, and as per the existing guidance,³² only the first 200 entries will be screened.

The systematic review may encounter linguistic challenges in the description of alienation and/or anomie in the pharmacy literature. For example, previous authors and/or the participants of studies may or may not use words derived from 'alienation' and/or 'anomie'. The formal indexing of papers may not also include 'alienation' and/or 'anomie'. Both of these are especially likely to be true where these states are objective, rather than subjective. To partially counter this possibility, in addition to the standard electronic bibliographic databases

and Google Scholar, the authors will conduct extensive targeted hand-searching and citation-searching, including:

- ▶ Papers referenced in the included studies, identified from their reference list
- ▶ Papers that cite the included studies
- ▶ Papers referenced in other paper types excluded in the screening that discuss or study alienation and/or anomie in pharmacists (eg, review articles, expert commentaries, editorials articles and/or systematic reviews), identified from their reference list.
- ▶ Papers that cite the other paper types excluded in the screening that discuss or study alienation and/or anomie in pharmacists (eg, review articles, expert commentaries, editorials articles and/or systematic reviews).
- ▶ Other publications by the lead authors of included studies.
- ▶ Journals from the included studies to identify non-indexed articles, using basic terms such as ‘alienation’, ‘alienate’ and ‘anomie’.
- ▶ Other web-based search engines (eg, Google) and websites using the basic terms ‘alienation’, ‘alienate’ and ‘anomie’ AND ‘pharmacist’

Search strategy

Searches will be undertaken in two separate arms: (a) terms relating to ‘pharmacists’ and (b) terms relating to ‘alienation’ or ‘anomie’. Searches will involve a mixture of controlled vocabulary terms and keywords. Multiple keyword synonyms for alienation and/or anomie will be used to attempt to counter some of the linguistic challenges and improve the capture rate of suitable studies, including versions of ‘estrangement’, ‘meaninglessness’, ‘powerlessness’, ‘normlessness’, ‘hopelessness’, ‘disillusionment’, ‘meaning in work’, ‘social isolation’, ‘moral distress’ and ‘value conflict’. One keyword antonym, ‘solidarity’, will also be used to look for cases that describe alienation and/or anomie through the lack of solidarity. ‘Title’, ‘Abstract’ and ‘Keyword Heading’ options will be used in search settings where available. Where applicable in each database, both the ‘explode’ function and the ‘include all subheadings’ functions will be used to include all the narrower terms below the main heading and to increase the identification rate of possible studies. ‘Full-text’ search option will also be used where available, including CINAHL Plus and Cochrane Library. The terms within each arm will be combined with a Boolean ‘OR’ command. The results from both separate arms will then be combined using a Boolean ‘AND’ command. Searches may be filtered by ‘peer-reviewed papers only’, where available.

The search terms and strategy were developed iteratively by the lead author (PF) and an experienced librarian (RO), guided by the other authors, and were tailored specifically for each database to be searched. The Peer Review of Electronic Search Strategies Guidelines were used to help form the search.³³ Test searches were

conducted to ensure the viability of the final strategies. The terms used and the structure of the search for each database are shown in [table 1](#).

Data selection

The review and data extraction processes will follow that described in the PRISMA statement.³⁰ All relevant entries uncovered in the search will be exported to a reference manager software (eg, EndNoteTM). Thereafter, article titles will be screened, and duplicates removed. Titles and abstracts will then be reviewed for relevance and inclusion/exclusion criteria. A second researcher will independently review all papers. At this point, lists between both researchers will be compared, Cohen’s kappa coefficient will be used to measure the inter-rater reliability and discrepancies (ie, differences between the two lists) will be discussed between the researchers and agreement reached on the final list for full-text review. Any disagreements will be adjudicated by a third researcher. A final PRISMA 2020 flow diagram for ‘new systematic reviews which included searches of databases, registers and other sources’ will be produced.³⁰

Full-text articles will be reviewed by the lead researcher and again independently double-reviewed by a second researcher and then a final produced by each researcher. Again, at this point lists between both researchers will be compared, Cohen’s kappa coefficient will be used to measure the inter-rater reliability and discrepancies (ie, differences between the two lists) will be discussed between the researchers and agreement reached. Any disagreements will be adjudicated by a third researcher.

Hand-searching and citation-searching will take place at this stage, as per the *Information Sources* section above. Papers thought to be interesting or relevant from the hand-searching and citation-searching sources will be identified by the lead author for independent double screen of both title/abstract and then full paper. The screening and review methods will mirror that already described, with the processes independently undertaken by two researchers, and adjudicated by a third researcher where needed, and Cohen’s kappa coefficient was calculated. A snow-balling technique will be used to further hand-screen, as per the *Information Sources* section above, if further relevant articles are identified and/or included. The screening and review methods will mirror those already described. This will continue until no further articles are identified.

The final included list of studies will then be complete.

Data analysis and synthesis

The narrative systematic review will be delivered over four methodological stages:

- ▶ *Step 1- Determining the role of theory in evidence synthesis:* With the help of two academic philosophers (BM & JC), we have synthesised six theoretical themes from alienation and anomie theory^{2-8,10} that will be explored in the synthesis: Care, Values, Meaning, Recognition, Autonomy and Shared Responsibility (see [figure 1](#)).

Table 1 Search terms and structure for each electronic bibliographic database

Database	Embase	Medline	APA PsychINFO	CINAHL plus†	Cochrane library†	Web of science core collection	Scopus	Google scholar
Pharmacist Arm	Pharmacist (controlled vocabulary) OR Pharmacist* (Keyword)	Pharmacists (controlled vocabulary) OR Pharmacist* (Keyword)	Pharmacists (controlled vocabulary) OR Pharmacist* (Keyword)	Pharmacists* (controlled vocabulary) OR Pharmacist Attitudes (controlled vocabulary) OR Pharmacist* (Keyword)	Pharmacists* (controlled vocabulary) OR Pharmacist* (Keyword)	Pharmacist* (Keyword)	Pharmacist* (Keyword)	'with all of the words' Pharmacist
Alienation or Anomie Arm	Alienation (controlled vocabulary) OR Alienat* (Keyword) OR Anomie (controlled vocabulary) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Social Alienation (controlled vocabulary) OR Alienat* (Keyword) OR Anomie (controlled vocabulary) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Alienation (controlled vocabulary) OR Alienat* (Keyword) OR Anomie (controlled vocabulary) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Social Alienation (controlled vocabulary) OR Alienat* (Keyword) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Social Alienation (controlled vocabulary) OR Alienat* (Keyword) OR Anomie (controlled vocabulary) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR Normless* (Keyword) OR Hopeless* (Keyword) OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Alienat* (Keyword) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Disillusion* (Keyword) OR Disillusionment (Keyword) OR Hopeless OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	Alienat* (Keyword) OR Anomie (Keyword) OR Estrange* (Keyword) OR Meaningless* (Keyword) OR Powerless* (Keyword) OR Normless* (Keyword) OR Disillusion* (Keyword) OR Disillusionment (Keyword) OR Hopeless OR Disillusion* (Keyword) OR "Meaning in work" (Keyword) OR "Social isolat*" (Keyword) OR "Moral distress" (Keyword) OR "Value conflict" (Keyword) OR Solidarity (Keyword)	'with at least one of the words' Alienate Alienated Alienation Anomie Estranged Estrangement Meaningless Powerless Powerlessness Normless Normlessness Disillusion Disillusioned Disillusionment Hopeless Hopelessness "Meaning in work" "Moral distress" "Social isolat*" Solidarity

OR, Boolean command to include any of the listed options; *, Truncation of word for alternative endings; †, 'Explode' function used and 'include all subheadings function used, where applicable; †, Full-text search option used, where available

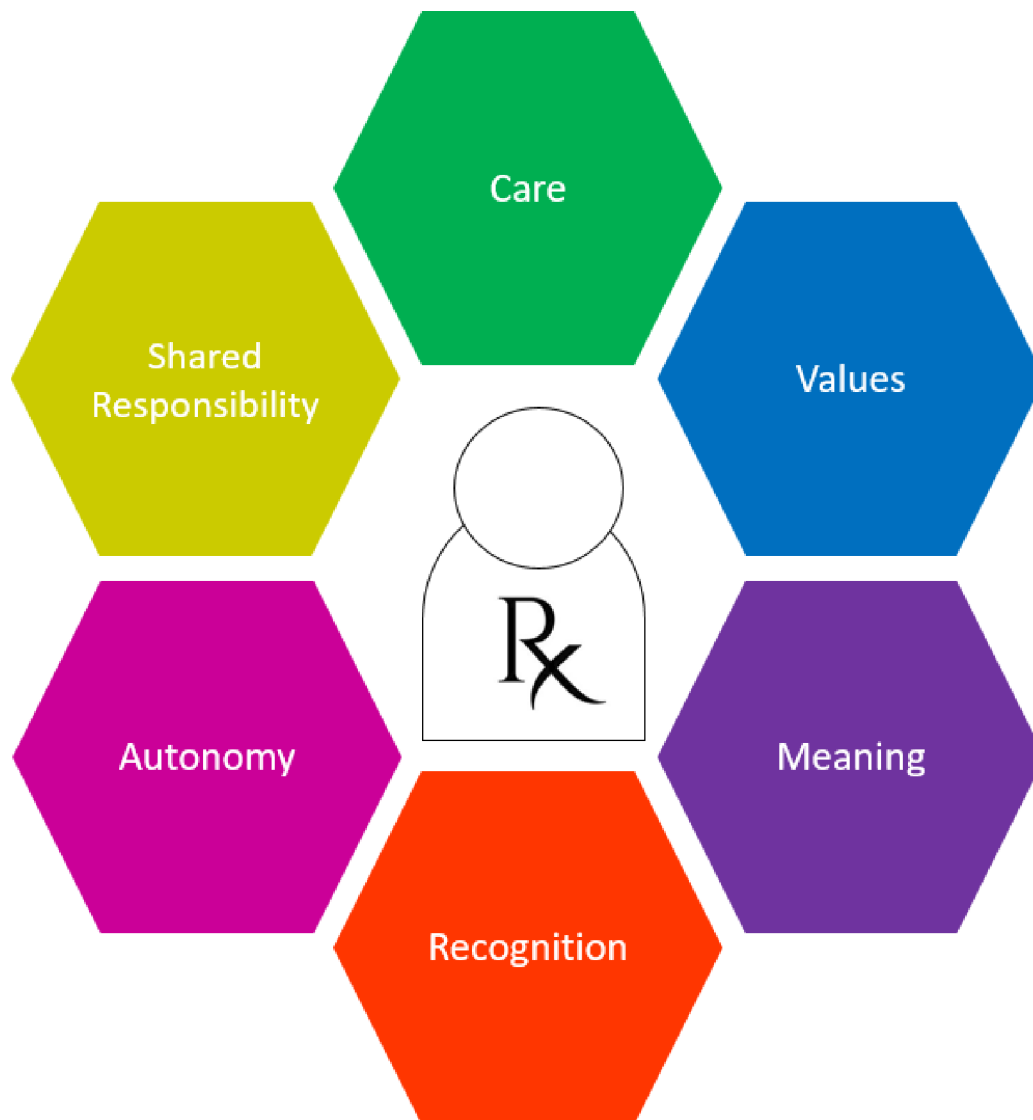


Figure 1 Model for unalienated work in pharmacists to be tested in the synthesis.

► *Step 2- Developing a preliminary descriptive and critical analysis/synthesis:*

- a. *Descriptive:* A standardised data extraction form will be used to extract relevant descriptive characteristics of each included study independently by the lead author and one of the other researchers. Papers will be described and compared both in text and in tabular form. Papers will be summarised, highlighting the year published, country, paper/study type, care location, group, intervention, comparator and summary findings of the study relevant to alienation and/or anomie.
- b. *Critical:* A quality assessment of each study will be carried out using the quality assessment with diverse studies (QuADS) appraisal tool.³⁴ The QuADS tool requires a rating from 0 to 3 across 13 separate criteria. This will be scored independently by two researchers. The first QuADS criteria, on the theoretical or conceptual underpinning of the study, will be scored independently by two academic philosophers with expertise in alienation and/or anomie theory. The

remaining QuADS criteria, from two to thirteen, will be scored independently by the lead researcher and senior supervising researcher. Scores across each QuADS criteria will be compared between both scorers and agreement sought. As necessary, a third researcher will adjudicate any disagreements. A QuADS score will be worked out for each study, out a possible 39 points. No arbitrary threshold of high or low quality will be predefined based on the numerical score, as per advice from the QuADS authors. Instead, deficits in quality will be narratively described. Papers will be described and compared both in text and in tabular form.

► *Step 3- Exploring relationships within and between studies:*

- a. *Coding:* All articles will be reviewed by the lead researcher and deductively coded for the six *a-priori* themes. Sub-codes below each of the six themes may also be used to help understand the theme, describing any focuses, causes, associated factors and/or consequences of alienation and/or anomie. Additional new codes may be used for any aspects of alienation or anomie

that do not fit into the six deductive *a-priori* themes. All studies will also be independently coded in the same way by a second researcher. A meeting between coders will then be arranged to discuss the initial coding of the data, including how well the data fits into the six theoretical *a-priori* themes and whether or not there is a need to develop any new themes outside of these and how best to code these. All disagreements will be adjudicated by a third researcher. Patterns of this coded data will be collated into broader concepts, which linked them together (ie, themes and sub-themes), where needed.

- b. **Mapping:** From the coded articles, a visual map of codes will then be produced, illustrating the link within and between themes and sub-themes. This visual map will help guide the formation of an initial preliminary narrative synthesis (PF). This map will be jointly produced during a face-to-face meeting between the lead author and the senior supervising author. All disagreements will be adjudicated by a third researcher.
- ▶ **Step 4: Assessing the robustness of the synthesis:** A GRADE Confidence in the Evidence from Reviews of Qualitative research (GRADE-CERQual) analysis will be undertaken, independently by two researchers, for both the six *a-priori* themes and if necessary any new themes, which have been produced.³⁵ Results will then be compared between both researchers and agreement sought. As necessary, a third researcher will adjudicate any disagreements. This analysis will deliver five key components for each theme:
 - a. A summary of review findings statement will be produced.
 - b. Studies contributing to the review finding will be logged against each theme.
 - c. Four key components of the finding will be analysed: Methodological limitations, Coherence, Adequacy and Relevance.
 - d. A GRADE-CERQual assessment of the confidence in the evidence in each finding will be produced
 - e. A summary explanation of this assessment will also be produced.

The analysis will be undertaken independently by two researchers. Results will then be compared between both scorers and agreement sought. As necessary, a third researcher will adjudicate any disagreements.

Analysis of subgroups or subsets

No analysis of subgroups or subsets of the data is planned.

Planned start date

May 2024.

Expected end date

End of November 2024.

Ethics and dissemination

Ethical permission is not required, as this study uses data from published research. Dissemination will be through

publication in peer-reviewed journals, and conference presentations.

X Paul Forsyth @PharmacistHF

Contributors PF, Conceptualisation, Methodology (all), Software (Test database searches), Visualisation, Writing – Original Draft Preparation (lead author), Writing – Review and Editing (lead author) and Guarantor. BM, Conceptualisation, Methodology (philosophical theory), Supervision (philosophical theory), Writing – Review and Editing. RO, Methodology (Information Sources and Search Strategy), Software (Test database searches), Writing – Review and Editing. JC, Methodology (philosophical theory), Writing – Review and Editing. GR, Writing – Review and Editing, Supervision (professional evidence base). SC, Methodology (systematic review methods), Writing – Review and Editing, Supervision (professional evidence base). AR, Conceptualisation, Methodology (all), Visualisation (review and editing), Writing – Original Draft Preparation (lead supervisor), Writing – Review and Editing (lead supervisor), Supervision (lead).

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Data availability statement Data sharing not applicable as no datasets generated and/or analysed for this study. Not applicable (methods paper)

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