**ABSTRACT**

**Introduction** Despite tremendous progress in care, people living with HIV (PLHIV) continue to experience HIV-related stigmatisation by nurses in non-HIV-specialised healthcare settings. This has consequences for the health of PLHIV and the spread of the virus. In the province of Quebec (Canada), only four interventions aimed at reducing the impact of HIV-related stigmatisation by nurses have been implemented since the beginning of the HIV pandemic. While mentoring and persuasion could be promising strategies, expression of fears of HIV could have deleterious effects on nurses’ attitudes towards PLHIV. In literature reviews on stigma reduction interventions, the contextual elements in which these interventions have been implemented is not considered. In order to develop new interventions, we need to understand how the mechanisms (M) by which interventions (I) interact with contexts (C) produce their outcomes (O).

**Methods and analysis** Realist synthesis (RS) was selected to formulate a programme theory that will rely on CIMO configuration to describe (1) nursing practices that may influence stigmatisation experiences by PLHIV in non-HIV-specialised healthcare settings, and (2) interventions that may promote the adoption of such practices by nurses. The RS will draw on the steps recommended by Pawson: clarify the scope of the review; search for evidence; appraise primary studies and extract data; synthesise evidence and draw conclusions. To allow an acute interpretation of the disparities between HIV-related stigmatisation experiences depending on people’s serological status, an initial version of the programme theory will be formulated from data gathered from scientific and grey literature, and then consolidated through realist interviews with various stakeholders (PLHIV, nurses, community workers and researchers).

**Ethics and dissemination** Ethical approval for realist interviews will be sought following the initial programme theory design. We intend to share the final programme theory with intervention developers via scientific publications and recommendations to community organisations that counter HIV-related stigmatisation.

**INTRODUCTION**

Since 1996, highly active antiretroviral therapy (ART) has significantly reduced death by AIDS of people living with HIV (PLHIV). This longer lifespan implies greater use of non-HIV-related healthcare services (such as long-term healthcare, mental healthcare or emergency care), which are outside of the ‘HIV network’ (ie, outside of the system of interconnected healthcare services specialised in HIV care). In five (qualitative) studies conducted in the specific context of Quebec province (the only French speaking province of Canada), PLHIV using these non-HIV-specialised healthcare services report experiencing stigmatisation from healthcare professionals (HCP), including nurses.1–5 Elsewhere in Western countries, between 45%6 and 83%7 of PLHIV reported being
victims of stigmatisation by HCP. Around 90% of the latter agreed with at least one prejudice towards PLHIV,8 such as the belief that HIV infection is the result of irresponsible behaviour. In a study conducted in the Netherlands, almost 60% of PLHIV reported having been a victim of stigmatisation, while most HCP stated that HIV-related stigmatisation was something of the past.9 This suggests that, as Feyissa,10 has emphasised, the perception of what constitutes stigmatisation differs greatly according to serological status. Although still unclear, the ways HCP do or do not contribute to PLHIV stigmatisation seem to differ by occupation, with nurses engaging in more behaviours considered ‘stigmatising’ than their colleagues in other professions.8 9 11

In non-HIV-specialised healthcare services, stigmatisation can manifest as inappropriate questions, unnecessary use of infection–prevention measures, confidentiality breaches and impeded or even denied access to healthcare.1 9 12–14 The health consequences for PLHIV of HIV-related stigmatisation have been documented in many reviews, several of which include at least one study conducted in Western countries. These include the following: less access to and lower use of healthcare services,15–18 lower medication adherence,15 19 20 lower mental health18 21 and lower social support;18 21 22 more symptoms of depression,15 18 anxiety18 and physical ailments.18 21 Studies have also shown that HIV-related stigmatisation could ultimately promote HIV transmission, since it is linked with increased viral load,23 24 and decreased HIV testing.27–29

Since the implementation of Quebec’s national HIV infection surveillance programme (in 2002), the province has registered 11 355 HIV infections.30 However, since the beginning of the HIV pandemic, only four interventions aimed at reducing the impact of stigmatisation by nurses in Quebec non-HIV-specialised healthcare settings have been published: one was published in 2014,31 one was published in 200132 and two was published in 1994.33 34 According to these studies, mentorship by experienced nurses31 and persuasive arguments (eg, about nurses’ moral and legal obligation)32 could be effective to change nurses’ attitudes towards PLHIV. However, a videotape presenting a nurse expressing her fear of AIDS and inviting participants to do the same in a meeting failed to improve student nurses’ attitude towards PLHIV.33 35 Other strategies can be found in 11 literature review, which had inventoried at least one intervention aimed at reducing HIV-related stigmatisation implemented in Western countries.35–45 However, identifying the ones that could be used in the specific context of nurses working in non-HIV-specialised healthcare settings similar to the one of Quebec remain hazardous. Indeed, the conclusions of these reviews are sometimes inconsistent, even contradictory. For instance, Brown et36 42 Ma et al40 and Phillips et al46 found that having contact with PLHIV, such as hearing testimonials in professional training, was a promising avenue for reducing HIV-related stigmatisation by HCP. Although in line with Greater Involvement of People Living with HIV/AIDS principles,47 this strategy is not demonstrated to be effective in a meta-analysis by Mak et41. Furthermore, while acknowledging that most interventions have favourable effects on stigmatisation-related outcomes, three of the 11 reviews found interventions that have only superficial and short-term effects.35 39 for which results were hardly interpretable (eg, stigmatisation decreases in both intervention and control group),45 or even that have increased stigmatisation.39 45 In a systematic review of guidelines, tools, standards of practice, best practices, consensus statements and systematic reviews, Feyissa et al46 conclude that despite the good quality of documents included, they ‘could not obtain evidence in a usable form’.

Inconsistency in systematic reviews and in meta-analysis conclusions may arise from inherent epistemological assumptions. Indeed, systematic reviews and meta-analysis draw on a hierarchy of evidence with randomised controlled trials at the top, as well as on aggregative (rather than configurative) logic.48 The strength of their conclusions may therefore be affected when the pooled interventions have highly heterogeneous implementation contexts, intervention strategies, targeted mechanisms and outcomes. The complexity of the phenomenon invites analysis using a methodology that will lead to an understanding of ‘what works, for whom, in what circumstances, in what respects, over what duration and, above all, why’.46 To this end, realist synthesis (RS)49 is particularly well suited to open the ‘black box’ of complex interventions and identify their change mechanisms,50 as it had recently been shown in two RS focussing on HIV-related stigma.51 52 Using an RS approach, this study aims to formulate a programme theory describing: (1) nursing practices that could reduce occurrence and intensity of HIV-related stigmatisation that PLHIV experience in non-HIV-specialised healthcare settings; and (2) interventions that could promote the adoption of such practices by nurses in non-HIV-specialised healthcare settings. We intend to conduct this RS by analysing interventions to reduce HIV-related stigmatisation implemented in contexts similar to the one of Quebec province, and by interviewing stakeholders.

METHODS AND ANALYSIS
RS is a theory-driven approach that stands out from systematic reviews or meta-analysis by its explanatory focus. Rather than aggregate interventions in a successive perspective (intervention X causes outcome Y), RS focuses on the relationship between the various contexts (C) of implementation, the underlying mechanisms (M) triggered by these interventions and the various outcomes (O) generated.49 53–55 The purpose of an RS is therefore to produce and refine a programme theory, which is based on the CMO configurations identified in data analysis.49 From this perspective, RS units of analysis are neither quantitative nor qualitative data; rather, they are
the theories that underlie every intervention, whether implicitly or explicitly stated by its designers. Gough et al. and Tricco et al. consider that RS is both an aggregative (or integrative) and a configurative (or interpretative) approach; this means that it focuses concurrently on collecting empirical data to inform decision-making around complex interventions and on refining theories, phenomena or concepts. Our RS will be based on the steps recommended by Pawson et al., as illustrated in figure 1, and reported in accordance with RAMESES publication standards.

**Step 1: clarify the scope of the review**

The first step of an RS consists of identifying the aim of the study and its research questions, as well as the candidate theories that will support analysis. The research questions for this study will be:

1. What are the contextual elements and mechanisms that might explain the occurrence and intensity of PLHIV’s experiences of HIV-related stigmatisation in non-HIV-specialised healthcare settings?
2. What are the characteristics of nursing practices that could reduce the occurrence and intensity of HIV-related stigmatisation experiences in non-HIV-specialised healthcare settings?
3. What are the contextual elements and mechanisms that might explain the adoption of these practices by nurses working in non-HIV-specialised healthcare settings?

4. What are the characteristics of the interventions that could encourage nurses to adopt these practices in non-HIV-specialised healthcare settings?

The relationships between these four research questions and the aim of the project are illustrated in figure 2.

Two theories will frame the analysis process. The first is the stigma complex, a theory that provides an unambiguous taxonomy of experiences of stigmatisation, including its basic concepts (stereotypes, prejudices, stigma, stigmatisation, etc.), its characteristics (physical, character, discredited, discreditable, etc.), its target variants (perceived stigmatisation, enacted stigmatisation, anticipated stigmatisation, internalised stigmatisation, structural stigmatisation, etc.) and its dimensions (negative affect, social distance, perception of dangerousness, etc.). The other selected theory is the behaviour change wheel (BCW), which optimally identifies behavioural change strategies. This model articulates the sources of a behaviour (physical and psychological capability, social and physical opportunity and reflective and automatic motivation), intervention functions (education, persuasion, training, modelling, etc.) and policy categories (guidelines, service provision, legislation, etc.). Some authors show the relevance of the BCW in RS, which optimally identifies behavioural change strategies. This model articulates the sources of a behaviour (physical and psychological capability, social and physical opportunity and reflective and automatic motivation), intervention functions (education, persuasion, training, modelling, etc.) and policy categories (guidelines, service provision, legislation, etc.). Some authors show the relevance of the BCW in RS.
Step 2: search for evidence

The second step Pawson et al recommend is an intuitive exploration of the literature to refine the inclusion criteria and identify rival theories that could improve the initial programme theory. Relevant empirical evidence is then identified more systematically and exhaustively. The search for evidence will be carried out in the CINAHL, Pubmed, PsycInfo, Scopus and Socindex databases. Websites of the WHO, UNAIDS and relevant HIV organisations of Quebec province (eg, CATIE, Portail VIH/SIDA du Québec and community organisations delivering services to PLHIV) will be searched for documents related to stigma reduction interventions (intervention reports, position paper and recommendations). Keywords will centre on PLHIV, stigmatisation, interventions and nurses (or other HCP) (see online supplemental additional file 1 for a draft of the keyword search strategy). Following McMahon et al, our search strategy will be developed from ‘known sets’ or primary studies relevant in the field. The characteristics of these studies (eg, MeSH terms, keywords in title and/or abstract) will be extracted to identify the search strategy that best balances sensitivity and specificity. However, Pawson et al warn that a strict systematic process could rule out studies that would in fact contribute to the programme theory. The search for evidence will therefore be an iterative process, carried out over the course of the research project, using the ‘CLUSTER’ searching, a mnemonic meaning looking for Citations, tracing Lead authors, identifying Unpublished materials, searching in Google Scholar, tracking Theories, ancestry searching for Early examples and Related project.

Among the evidence retrieved, the documents will be screened based on their title and abstract, according to four inclusion criteria:

1. The documents describe one or more interventions that reduce occurrence and intensity of HIV-related stigmatisation in non-HIV-specialised healthcare settings.
2. The target population includes PLHIV and/or nurses (and documents about other HCP will be considered if contexts can be related to nursing practice).
3. The non-HIV-specialised healthcare setting is located in a Western country (ie, Canada, USA, Western Europe, Australia or New Zealand).
4. The documents are written in French or in English.

Given that interventions implemented in the 1980s may have targeted nurses still in work and/or PLHIV still alive, and since these interventions could still have an effect on stigmatisation experienced by PLHIV, no study will be excluded based on its publication date. Documents that meet these criteria will be included in the next step, regardless of their methodology (qualitative, quantitative or mixed). Indeed, the strength of RS is precisely that it combines the strengths of quantitative and qualitative approaches in a coherent way in order to shed light on the underlying mechanisms of interventions. While quantitative data can highlight the existence of relationships...
between variables (relationships that can eventually be generalised), qualitative data are indispensable for describing the mechanisms of these relationships. Moreover, when quantitative data are heterogeneous (which is the case in this research), quantitative data can be analysed narratively.

**Step 3: appraise primary studies and extract data**

Full-text will next be screened based on their relevance and rigour. Relevance does not refer to the study topic per se but rather to its capacity to ‘populate’ the chosen framework theories (ie, the stigma complex and the BCW) and to enrich the programme theory. Rigour does not refer to the studies’ methodological quality (which can be determined by appraisal tools) but rather to the credibility and trustworthiness of inferences from the data. Indeed, while appraisal tools assign a rating to studies as a whole, RS units of analysis are the studies’ (sometimes implicit) underlying theories. Therefore, the study’s rigour can be appraised by evaluating the reasoning of its arguments.

Only the data from studies that are deemed relevant and rigorous will be extracted, using an Excel spreadsheet and sorted by context (C), intervention (I), mechanism (M) or outcome (O). The context will be described according to the four levels suggested by MacFarlane et al: individual (individuals’ capacity and motivation); interpersonal (communication and influences); organisational (priority, culture and resources) and external (policies and legislation). As suggested by Denyer et al and De Wegener et al, the characteristics of the interventions themselves (modalities, objectives, content, length, etc.) will be extracted into a distinct category (I), so that data can be organised in a CIMO configuration. Data related to mechanisms will be extracted and sorted into the five constructs suggested by Westhorp: power and liabilities; forces; interactions; feedback and feedforward processes and reasoning and resources. Finally, outcomes will consider proximal (eg, stereotyping, prejudice) and distal effects (eg, behaviours, stigmatisation experiences) of the interventions. All these data will be extracted using the BCW and stigma complex vocabulary and theoretical articulation. Excel spreadsheets will also include data about the studies’ characteristics, such as year of publication, location, methodology or characteristics of the sample.

As recommended by Rycroft-Malone et al, the extraction form will be pretested by the researchers. The first studies will be analysed one at a time by three members of the team until an unambiguous extraction form is obtained. The extraction form will then be used by the primary investigator with periodic checks by the others. Attention will be paid to keep the links between CIMO elements intact through the extraction process, to avoid the pitfall of cataloguing and rearranging CIMO elements from multiple sources that are not linked. To do so, CIMO elements will be extracted in dyads, triads or tetrads.

**Step 4: synthesise evidence and draw conclusions**

In this step, the dyads, triads and tetrads of previously extracted CIMO elements are configured into CIMO chains, and these configurations are then articulated into a programme theory. This implies inductive reasoning (inferences made from data), deductive reasoning (inferences made from the stigma complex and BCW) and retroductive reasoning (inferences made in regard to underlying mechanisms of the interventions).

CIMO configurations are not independent—every CIMO configuration can indeed be nested in another—and therefore should not be presented linearly. To organise the data extracted as CIMO configurations, we intend to use the qualitative data analysis software NVIVO, as per the three stages Bergeron and Gaboury recommend: (1) code data in CIMO categories while using memos to ensure transparency of methodological choices; (2) use matrix queries to identify connections between categories in order to configure CIMO elements and (3) compare memos to CIMO configurations to ensure that the complexity of the phenomena has been captured in the analysis.

The CIMO configurations will then be synthesised in a programme theory. This process will involve an analysis of CIMO configurations using an intraintervention perspective, followed by an intercontext perspective. The intraintervention perspective refers to the comparison of CIMO configurations of similar interventions, in order to identify demiregularities in the triggered mechanisms. The intercontext perspective refers to the comparison of CIMO configurations across contexts, in order to identify demiregularities in the way mechanisms generates outcomes is influenced by contextual elements. In both intraintervention and intercontext perspective, the synthesis process will use conceptual tools such as juxtaposition (ie, when data from different sources complement each other), reconciliation (ie, when data can explain results that appear to be contradictory), adjudication (ie, selecting data based on their quality), consolidation (ie, when data provide multifaceted explanations) and situation (ie, when mechanisms are linked to their specific context). The chains of inferences generated by this synthesis process will constitute the different parts of the programme theory.

This initial programme theory will then be submitted to the various stakeholders by way of realist interviews. Manzano states that realist interviews can be used in three different stages of realist research: theory gleaning, theory refining and theory consolidation. We intend to choose the third option for this study because of the significant disparity in the stakeholders’ experience of stigmatisation according to HIV status. We therefore prefer to formulate an initial programme theory based on the literature to allow a more acute interpretation of the disparities to emerge from the interviews.

The purpose of realist interviews is quite different from that of qualitative interviews, since they focus specifically on participants’ opinions on the programme...
Patients and public involvement

Members of the public were not involved in development of this protocol.
REFERENCES

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