

# BMJ Open Developing a framework for community-based sexual health interventions for youth in the rural setting: protocol for a participatory action research study

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**To cite:** Heslop CW, Burns S, Lobo R, *et al*. Developing a framework for community-based sexual health interventions for youth in the rural setting: protocol for a participatory action research study. *BMJ Open* 2017;0:e013368. doi:10.1136/bmjopen-2016-013368

► Prepublication history for this paper are available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2016-013368>).

Received 7 July 2016  
Revised 1 March 2017  
Accepted 9 March 2017

## ABSTRACT

**Introduction** There is limited research examining community-based or multilevel interventions that address the sexual health of young people in the rural Australian context. This paper describes the Participatory Action Research (PAR) project that will develop and validate a framework that is effective for planning, implementing and evaluating multilevel community-based sexual health interventions for young people aged 16–24 years in the Australian rural setting.

**Methods and analysis** To develop a framework for sexual health interventions with stakeholders, PAR will be used. Three PAR cycles will be conducted, using semistructured one-on-one interviews, focus groups, community mapping and photovoice to inform the development of a draft framework. Cycle 2 and Cycle 3 will use targeted Delphi studies to gather evaluation and feedback on the developed draft framework. All data collected will be reviewed and analysed in detail and coded as concepts become apparent at each stage of the process.

**Ethics and dissemination** This protocol describes a supervised doctoral research project. This project seeks to contribute to the literature regarding PAR in the rural setting and the use of the Delphi technique within PAR projects. The developed framework as a result of the project will provide a foundation for further research testing the application of the framework in other settings and health areas. This research has received ethics approval from the Curtin University Human Research and Ethics Committee (HR96/2015).

## INTRODUCTION

There is limited research examining community-based or multilevel interventions that address the sexual health of young people in the rural Australian context. This target group is a priority population in the Third National Sexually Transmissible Infections Strategy 2014–2017.<sup>1</sup> While efforts must be made to improve youth sexual health, barriers to establishing appropriate sexual health services in rural areas present additional challenges relating to access, anonymity and service availability.<sup>2–5</sup>

## Strengths and limitations of this study

- As Participatory Action Research (PAR) is systematic and rigorous, this method will enable stakeholders and researchers to explore and discover effective solutions within the research process.
- Using PAR will enable increased engagement and the collaboration with research participants and stakeholders.
- The methods of this project will provide further literature on the use of PAR in the rural setting and the use of the Delphi process within PAR.
- PAR is time intensive and will require prolonged engagement with the research setting and stakeholders.
- This PAR project will be conducted as ‘insider-research’, presenting significant challenges such as managing bias, maintaining confidentiality and anonymity.

This project will use Bronfenbrenner’s Ecological Framework for Human Development to identify and evaluate how the different socioecological levels are addressed by current services.<sup>6</sup> A systematic review of 15 sexual behaviour interventions targeting US Latina adolescents found that while different socioecological levels were often included, individual and interpersonal levels were the most common focus.<sup>7</sup> The review authors’ recommended interventions should address community and societal level issues influencing youth sexual health.<sup>7</sup> Similarly in their rapid review Brown *et al*<sup>8</sup> found preventative programmes that targeted multiple domains of a young person’s life were most effective in increasing protective behaviours, increasing awareness and knowledge around sexually transmitted infection (STI) prevention and reducing STI among young people. A review of STI prevention interventions suggests maintaining these interventions in the



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longer term may require the incorporation of a variety of community components and societal levels to ensure sustainability.<sup>9</sup>

Multilevel programmes based within broader socio-ecological systems have been found to be effective in enhancing positive youth sexual health outcomes,<sup>8</sup> although application in rural Australia is yet to be tested. Primary prevention strategies and education, combined with voluntary STI testing and early treatment, are highlighted in the Third National Sexually Transmissible Infections Strategy 2014–2017<sup>1</sup> as the most effective response to the spread of STI; however, there is no suitable framework or model for provision and coordination of these strategies and interventions in the rural setting.

This PAR project takes place in a small rural town in Western Australia. A community health organisation forum within the town<sup>10</sup> highlighted that healthcare providers viewed themselves as ‘*not youth friendly*’, with low youth engagement and expressed a desire to improve youth health services. A series of interviews with 20 rural-based youth participants were conducted early in 2014 with feedback showing that young people in the town were unaware of the necessity to be tested for STIs, how infections are transmitted and participants raised issues relating to condom access and use.<sup>11</sup> Within the rural setting, sexual education and services are often delivered by non-specialist services and may lack coordination, planning and evaluation. A framework that identifies the key stakeholders, education and services—and how they interact within the setting—will be developed through this PAR project. This framework will provide a foundation for further research testing the application of the framework in other settings and health areas.

Participatory Action Research (PAR) has been used in Toronto, Canada, and Australia to work in direct consultation with young people and service providers to improve the ways in which sexual health promotion and sexual health services are delivered.<sup>12–13</sup> There is a lack of evidence in the rural setting of PAR being used to improve the delivery of sexual health services such as sexual health promotion, primary prevention strategies or STI testing and interventions. This project aims to engage stakeholders within the rural community setting by using PAR to examine and explore ways to improve the delivery of sexual health promotion education; sexual health-related interagency communication and sexual health service provision for young people. This PAR process will lead to the development of a draft framework that communities can use. This draft framework will identify key stakeholders, key settings, services and potential interventions within the community.

The developed draft framework will be further evaluated and refined through targeted Delphi studies. Delphi studies are a method of group communication used to gain consensus and feedback from a group of identified experts.<sup>14</sup> There is limited literature relating to the use of the Delphi method within PAR. Fletcher and Marchildon<sup>15</sup> used a modified Delphi method within

their PAR project on health leadership with an increased emphasis on the qualitative nature of the open-ended questionnaire and suggest that the method is appropriate for PAR studies. This project seeks to contribute to the literature regarding PAR in the rural setting and the use of the Delphi studies within PAR projects.

## AIM AND OBJECTIVES

This PAR project will develop and validate a framework that is effective for planning, implementing and evaluating multilevel community-based sexual health interventions for young people aged 16–24 years in the Australian rural setting.

### Study objectives

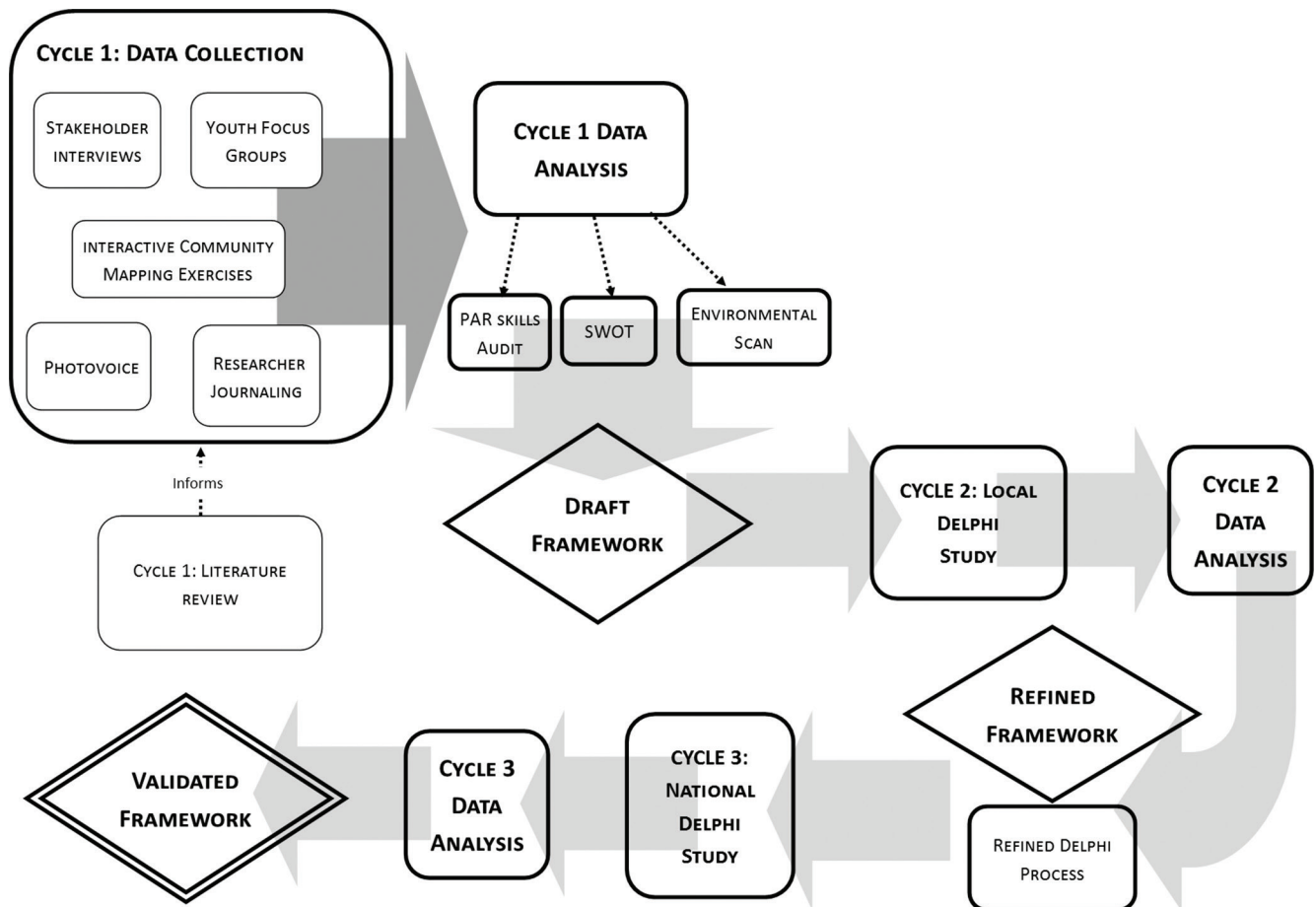
The objectives of the project will be:

1. to conduct an analysis in relation to evidence-based practice, settings, key stakeholders and interventions to understand the context of the setting;
2. develop a framework in consultation with key stakeholders and the target group for planning, implementing and evaluating community-based youth sexual health interventions in the rural setting using a PAR methodology; and
3. evaluate the validity of the framework.

## METHODS AND ANALYSIS

PAR is a systematic and rigorous approach to investigation that enables stakeholders and researchers to explore and discover effective solutions to everyday life problems.<sup>16</sup> PAR involves giving stakeholders the opportunity to be involved with multiple recurrent stages (cycles) of community-based observation, reflection, planning and action,<sup>17</sup> with each cycle following on from and influencing subsequent cycles.<sup>16–19</sup> This research method has an orientation towards community action and analysis to address social problems.<sup>18</sup> Using PAR in the community is beneficial in increasing engagement and the collaborative nature of the research.<sup>20–22</sup> Bronfenbrenner’s Ecological Framework for Human Development provides a framework for highlighting and examining individual, interpersonal, organisational and community inter-relationships.<sup>6</sup>

Three PAR cycles will be conducted as per [figure 1](#). PAR Cycle 1 will include semi-structured one-on-one interviews, focus groups, community mapping and photovoice to inform the development of a draft framework. Cycle 2 and Cycle 3 will use targeted Delphi studies to gather evaluation and feedback on the developed draft framework by experts in sexual health provision and rural health to allow refinement and revision and improved practical application. Effort will be made to use innovative and engaging data collection methods to ensure participant engagement and high data quality, particularly with youth participants<sup>17</sup> as using tools other than survey-based tools may increase the detail of response from participants in



**Figure 1** Participatory action research framework development flowchart.

such a small sample size while reducing social desirability bias.<sup>19</sup>

## SETTING

This project will take place in a small rural community in Western Australia. The researcher lives and works within the community and will manage potential impacts of conducting insider research within their own community. There are benefits of conducting insider research, including holding a greater understanding of history and culture within the setting<sup>23</sup> and the opportunity to gather a greater volume and depth of data from known informants.<sup>24</sup> There are also significant challenges such as bias, maintaining confidentiality and anonymity and established informant relationships.<sup>25–26</sup> There is current literature available that provides guidance on managing the challenges of insider research,<sup>25–28</sup> although this literature focuses on organisational structure or workplace research, rather than an entire small community.

The research setting is a Western Australian town, with a population of approximately 5500 people. It is located approximately 50 km from the nearest regional centre (population approximately 40 000) and 400 km from the nearest major city. Young people aged between 16 and 24 years comprise around 10% of the overall population.<sup>29</sup>

No regular public transport exists between this town and the regional centre, aside from school bus services. No sexual health-specific services are provided within the town beyond generalist healthcare, though regional umbrella support is provided from the regional centre.

Participants in this study will be community stakeholders and young people. Youth participants will be engaged to ensure that the implications of implementing the framework and any suggested interventions are youth-friendly, appropriate and reflect the needs of the target population.

## PAR CYCLE 1 Recruitment and sample size

The researcher will be using existing professional networks and a local understanding of services and knowledge of the setting to identify potential participants. A purposive sample of key professional and community stakeholders will be recruited for the initial interviews. Approximately 15–20 community stakeholders will participate in the context setting observation cycle in PAR Cycle 1.

Youth participants (16–19 years) will also be recruited through snowball sampling technique to participate in the context setting observation cycle in PAR Cycle 1. Approximately 30 young people will be recruited to



participate in three focus groups. Purposive selection of focus group participants for one-on-one interviews will be used if more in-depth data are required, and these participants will be invited to participate in the photovoice component of the research. Additional recruitment will take place through peer referral and advertising through existing social media networks (sporting club pages, youth centre pages and community organisation pages).

Youth participants (n=10) from the focus groups will be purposively selected to attend training on the photovoice project and will be asked to take photographs to provide further context to the study.

### Data collection

The data collected in PAR Cycle 1 will be used to identify and analyse the needs, gaps, weaknesses and opportunities within the setting relating to current and potential settings, stakeholders and interventions for youth sexual health. These data will also inform the development of the draft framework.

Throughout the project, the researcher will keep a comprehensive reflective research journal, cataloguing the progress, obstacles and successes of the research process. This journal will be kept to acknowledge the researcher's experiences and context within the research, analysis and interpretation.<sup>30 31</sup> The journal will also act as a component of the audit trail for the study.<sup>32</sup> Reflective journals can also increase research validity by making subjective processes transparent for those outside the research project.<sup>30</sup>

### Stakeholders

Data will be collected through semistructured one-to-one interviews with stakeholders. A semistructured interview guide will be developed using the socioecological health model to identify barriers, facilitators and opportunities associated with each level of the model. Semistructured interviews have been chosen to allow stakeholders the freedom to express their views in their own terms<sup>33</sup> while allowing for the discovery or elaboration of information provided within the interview.<sup>34</sup> The interview questions will address an environmental scan and strength, weakness, opportunity and threat (SWOT) analysis for youth sexual health interventions within the setting. Consistent with qualitative research methodology, interview questions will be modified and refined throughout the data collection process as unexplored phenomena are exposed.<sup>35</sup>

### Youth (16–19 years)

Data from youth focus groups and one-on-one interviews will be combined with stakeholder data to inform environmental scan and SWOT analysis of the community. This community analysis will provide participants with the opportunity to highlight what is already available and what is required to address youth sexual health needs. Community mapping exercises will be used within focus groups and interviews as an interactive visual and

relational data gathering technique.<sup>36</sup> Participants will be asked to draw maps that graphically display their perception of services within the town, the interaction with and between services and their ideals regarding service location.

Photovoice is a participatory research method that can be used to contribute to an enhanced understanding of community assets and needs.<sup>37</sup> Photovoice will be used to triangulate the interview and focus group data<sup>37</sup> and has been previously used effectively to engage with youth participants in other studies.<sup>38 39</sup> Youth participants (n=10) from the focus groups will be purposively selected to attend training on the photovoice project and will be asked to take photographs using their own smartphones to provide further context to the study. Different themes will be explored,<sup>38</sup> from the general nature of the town to access points of sexual health services and resources, to other themes relating to sexual health within the rural town context. Smartphone ownership in Australia is high,<sup>40</sup> particularly among young people, with 91% of Australian teens aged 14–17 years owning a mobile phone and 94% of those youth mobile phone owners having a smartphone.<sup>41</sup> Participants will be asked to take photographs on their own devices that capture information and the discussed themes from their own personal perspective. The photography topics will be developed with participant involvement and be guided by early focus groups and interviews with young people.<sup>37</sup>

Interviews, focus groups and photovoice sessions will be facilitated by the lead researcher and will be conducted in private, quiet, places that are convenient and appropriate to the participants (eg, clubs, youth centres and health centres) and will be organised directly with each participant or group. Interviews and focus group sessions will take between 40 and 60 min. Photovoice sessions will be facilitated by the researcher and are anticipated to take between 45 and 90 min per session with the duration, number and frequency of the sessions to be negotiated with participants.<sup>39 42</sup> Interviews, focus group discussions and photovoice analysis will be audio-recorded and transcribed verbatim to assist with data analysis.

### Analysis

All data collected will be reviewed and analysed in detail and coded as concepts become apparent at each stage of the process and reported as part of the PAR process.<sup>18</sup> All will be managed using NVivo software.

### Interviews and focus groups

A grounded theory approach to data analysis will be used involving constant comparison analysis of the interview and focus group transcription data that will commence with the first interview. Constant comparison analysis requires the researcher to continually sort through the data collected, coding the information to identify key themes and reinforce theory generation.<sup>43 44</sup> Constant comparison analysis of focus groups and interviews will assist the researcher in assessing data saturation as it is



possible to assess if the themes that emerged from one participant or group also emerged in others.<sup>35 45 46</sup> The stages of analysis will involve open coding of manuscripts to reduce the data into small units, axial coding to group these units into categories followed by selective coding to develop themes that express the content.<sup>35 44 47</sup>

### Community mapping

Visual mapping data will be summarised through transference into written descriptive data explaining each participant's community map. These data will be sorted and categorised as themes develop using a grounded theory approach.<sup>36</sup> The newly categorised data will be analysed in a subsequent session with participants to review categories for consistency and to identify key themes.

### Photovoice

Participants will be involved with the early analysis of photographs, selecting photographs that most accurately reflect the project aims and contextualising the photography and initial identification of issues, themes and theories that emerge. Ensuring participant involvement will avoid distortion of the data to fit the researcher's needs.<sup>48</sup> Issues, themes and theories will be further analysed by the researcher and assigned codes.

### PAR CYCLE 2

It is planned that PAR Cycle 2 will use a Delphi study to further develop and refine the draft framework; however, PAR is an iterative process, featuring revision and exploration of issues and themes as they evolve within the research process. The exact nature of Cycles 2 and 3 of this PAR study cannot be completely known prior to the commencement of the study, because the study participants and their needs will influence how the study progresses.<sup>16 49</sup> Additional ethics approval will be sought for any additional processes required.

### Recruitment and sample size

There is a lack of consensus on what represents adequate sample size for Delphi studies.<sup>50 51</sup> Delphi panel size does not depend on statistical power but relies on the dynamics of a group for arriving at consensus with the literature recommending 10–18 experts on a Delphi panel.<sup>51</sup>

The initial community organisations and stakeholders involved in Cycle 1 will be invited to provide feedback on the developed draft framework. Any individuals and organisations that were identified in the initial cycle but who were not approached or unable to participate will also be invited. Additional health workers from primary healthcare (general practitioners and practice nurses) and youth services (support officers) may be approached to provide feedback on the framework if required.

It is anticipated that approximately 80% of participants from PAR Cycle 1 will participate in the initial Delphi study, alongside additional recruited participants

in the second cycle of the PAR study. It is anticipated that approximately 30 local participants will need to be approached to provide feedback on the framework, to allow for refusals, non-responses and withdrawals. The number to be recruited in PAR Cycle 2 will be influenced by community involvement in the first cycle of the project.

### Data collection

The Delphi technique is a group communication process as well as a method of achieving a consensus of opinion.<sup>14</sup> The Delphi technique process for this study is displayed in [figure 2](#). During PAR Cycle 2 participants will be invited to provide feedback on how appropriate and effective the framework developed in PAR Cycle 1 will be for implementing and coordinating community-based youth sexual health interventions in the setting. To collect this information, an open-ended questionnaire, informed by PAR cycle 1 data, will form the first stage of the Delphi study, while subsequent cycles of inquiry will provide participants with a series of opportunities to offer further feedback on the framework.<sup>14</sup> Data will be grouped and verified with participants to ensure that the data are fairly represented. Further iterations of the Delphi study will enable the most important factors to be identified and ranked using a 7-point Likert scale.<sup>15 51</sup> Iterations of the survey will continue until participants reach 80% consensus on the framework.<sup>15 51</sup>

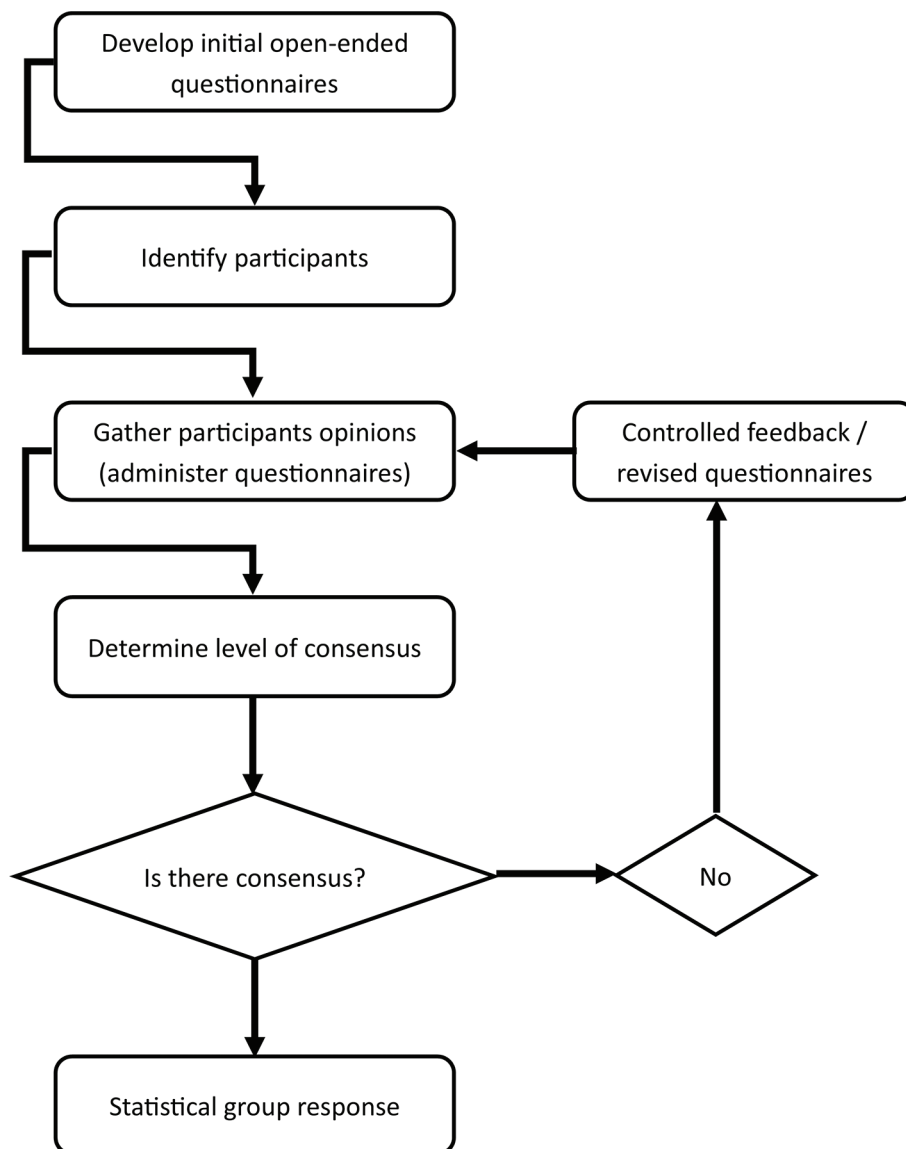
### Analysis

Data collected in the first round of Delphi questionnaires will be qualitative in nature and will be analysed using content analysis techniques.<sup>14 50</sup> This process will be informed by the concepts of the socioecological model.

Subsequent iterations of the Delphi study will provide participants with their earlier responses to compare with the new data that has been summarised and edited. Participants will then rate or rank the new statements using 7-point Likert scales.<sup>14 15 50 51</sup> Statistical analysis will be performed on the ranked Likert scales to identify statements that achieve group consensus.<sup>14</sup> Measures of central tendency (means, mode and median) and level of dispersion (SD and IQR) will be calculated, and a third questionnaire consisting of the statements and their statistical ratings from the previous Delphi round will be presented to participants.<sup>14 50</sup> Further statistical analysis of the 7-point Likert scales will be used to judge the level of consensus to the statements.

### PAR CYCLE 3

Cycle 3 is an expanded consultation on the refined framework using the Delphi method as informed by the localised Delphi study. Primary healthcare professionals, youth workers, health promotion professionals and other youth-focused professions involved with sexual health interventions in the rural setting will be approached to provide feedback on the refined framework. Participants from Cycle 2 will also be invited to participate in this final



**Figure 2** Delphi flowchart for provision of stakeholder feedback on draft framework in PAR Cycles 2 and 3.

cycle, with feedback compared with the findings of the Cycle 2 Delphi study.

### Recruitment and sample size

The PAR Cycle 3 Delphi study will engage approximately 30 expert participants with a background of primary health, youth work, health promotion and other youth-focused professions in the rural setting. A non-probability sampling technique will be used to select a panel of national and international expert participants based on their ability to generate insight into community-based sexual health interventions in the rural setting. Professional primary healthcare and youth work networks will be used initially to contact national and international participants.

### Data collection

Data collection for Cycle 3 will follow a similar approach to Cycle 2, with an open-ended questionnaire to be

administered with participants to provide feedback on how appropriate and effective the developed framework will be for implementing and coordinating community-based youth sexual health interventions in the rural setting.

### Analysis

Data analysis of the Cycle 3 Delphi study will mirror the analysis method in the earlier Cycle 2 Delphi study.

### RIGOUR

Several measures will be employed to increase the rigour of this research. To reduce bias, data will be collected and coded by the researcher and discussed regularly with the research team.<sup>52</sup> The researcher will acknowledge and record sources of potential personal bias that could influence the processes of data collection and analysis as a result of existing networks and connections. This level



of documentation will increase confirmability of the research by providing an audit trail allowing observers to confirm the veracity of the study.<sup>16 53</sup> Increased credibility will be achieved through prolonged engagement with the setting and regular member checking of raw data, analyses and reports.<sup>16</sup> Detailed descriptions of the contextual data and activities of the study, through immersion, reflective journaling and detailed documentation will provide transferability through allowing others to analyse the situation and research outcomes based on setting and context.<sup>53 54</sup> Triangulation across data sources and data collection procedures will allow the determination of congruence of findings.<sup>16 52</sup> Stakeholders may be reinterviewed to further clarify or examine points if necessary.

To reduce bias and enhance conformability, the coding and themes will be analysed by the research group (n=3). This will involve a reflective practice whereby the lead author will code, then codes will be discussed by the research group and further refined to ensure the themes reflect the dataset. This process will enhance dependability and intercoder reliability, while the Delphi process will also provide an opportunity for research participants to check the meanings they intended are included in the themes. The research group will be involved in the development of all interview guides and further refinement of the guide will occur as a team. While there are advantages to all interviews being conducted by one researcher, this process can also reduce interviewer bias. The research group discussions will reduce subjectivity.<sup>55</sup>

## ETHICS AND DISSEMINATION

This research has received ethics approval from the Curtin University Human Research and Ethics Committee (HR96/2015).

Given the small size of the community in which the project will be undertaken, there are ethical considerations in relation to protecting the anonymity of participants and confidentiality of data, particularly regarding interviews and focus groups. The connected nature of small communities will be acknowledged in consent forms and care will be taken in analysis and presentation of data to ensure participant confidentiality. Data that may overtly identify participants will be excluded.<sup>56</sup>

Consent will be required from all participants prior to their involvement in the project. The project will target young people and will involve young people below the age of 18 years. Participants under the age of 18 years, but over the age to consent to sexual activity in Western Australia (16 years), as per the Criminal Code Act Compilation Act 1913 (Section 321)<sup>57</sup> and who are judged to be mature enough to understand the research study and provide consent without parental consent,<sup>58</sup> will be considered as mature minors. Consistent with other studies,<sup>59</sup> a standardised procedure for establishing mature minor status has been developed.<sup>59</sup>

This is a supervised doctoral research project, and the results of this research project will be used by the

researcher to obtain a Doctor of Philosophy. Several papers relating the results of the project will be published over the course of the project. In an effort to ensure the wider community is aware of the project, its methods and objectives, information on the study will be released via the local community newspaper, community centres and community social media networks. The progress and findings of the study will also be communicated to stakeholders and the community through local media and resource centres, forums, social media and electronic newsletters.

**Acknowledgements** The authors acknowledge the community of Denmark in their support of this study, particularly the Denmark Health Hub, Denmark Youth Services and Denmark-Walpole Football Club.

**Contributors** This protocol paper describes a supervised doctoral research project, and the results of this research project will be used by CWH to obtain a Doctor of Philosophy at Curtin University. CWH was responsible for coordinating the contribution of all authors to this paper. All authors made significant contributions to the development and conceptualisation of the protocol. CWH was responsible for drafting this paper. SB, RL and RM were responsible for editing and guidance on the paper. All authors were responsible for critically revising the paper. All authors approved the final version of this paper for submission.

**Competing interests** None declared.

**Patient consent** Obtained

**Ethics approval** Curtin University Human Research and Ethics Committee.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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*BMJ Open* 2017 7:

doi: [10.1136/bmjopen-2016-013368](https://doi.org/10.1136/bmjopen-2016-013368)

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