



Using decision mapping to inform the development of a stated choice survey to elicit youth preferences for sexual and reproductive health and HIV services in rural Malawi

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ABSTRACT

The process of designing and developing discrete choice experiments (DCEs) is often under reported. The need to adequately report the results of qualitative work used to identify attributes and levels used in a DCE is recognised. However, one area that has received relatively little attention is the exploration of the choice question of interest. This paper provides a case study of the process used to design a stated preference survey to assess youth preferences for integrated sexual and reproductive health (SRH) and HIV outreach services in Malawi.

Development and design consisted of six distinct but overlapping and iterative stages. Stage one was a review of the literature. Stage two involved developing a decision map to conceptualise the choice processes involved. Stage three included twelve focus group discussions with young people aged 15–24 ($n = 113$) and three key informant interviews ($n = 3$) conducted in Ntcheu District, Malawi. Stage four involved analysis of qualitative data and identification of potential attributes and levels. The choice format and experimental design were selected in stages five and six.

The results of the literature review were used to develop a decision map outlining the choices that young people accessing SRH services may face. For youth that would like to use services two key choices were identified: the choice *between* providers and the choice of service delivery attributes *within* a provider type. Youth preferences for provider type are best explored using a DCE with a labelled design, while preferences for service delivery attributes associated with a particular provider are better understood using an unlabelled design. Consequently, two DCEs were adopted to jointly assess preferences in this context.

Used in combination, the results of the literature review, the decision mapping process and the qualitative work provided robust approach to designing the DCEs individually and as complementary pieces of work.

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Introduction

Discrete choice experiments (DCEs) are commonly used to provide insight into individual and social preferences for health services and to examine the relative importance of different aspects of health service design and delivery (de Bekker Grob, Ryan, & Gerard, 2010). In recent years advances in estimation methods have allowed more flexible approaches to analysing DCE responses while advances in experimental design have led to the use of more statistically optimal designs (de Bekker Grob et al., 2010). In addition to creating more sophisticated experimental designs and

estimation procedures, a few researchers have taken steps to improve the reporting of the qualitative methods used to identify the attributes and levels used in choice experiments (Coast et al., 2011; Coast & Horrocks, 2007). However, one area that has received relatively little attention is the exploration of the choice process and refinement of the choice problem of interest.

DCE development and design generally includes several stages starting first with the exploration of the choice process, then identifying attributes and identifying levels, selecting a choice format, and finally selecting an experimental design to develop choice scenarios (Amaya-Amaya, Gerard, & Ryan, 2008; Lancsar & Louviere, 2008; Louviere, Flynn, & Carson, 2010). These stages may be fluid and researchers may go through several iterations before settling on a final DCE design which is well suited to addressing the research aims and will allow for the correct

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estimation of a utility function. To date, much of the literature on DCEs in the field of health economics describes the process of DCE development and design as though the first stage is the selection of the attributes and levels to be used in the experiment. Yet it is in the exploration of the choice process that researchers have the opportunity to develop a conceptual framework, to ensure that there is a clear link between the research objectives and the design of the experiment and to ensure that the final DCE will produce results that address the research aims. This process has not previously been described in the literature and there is very little guidance available for researchers on what it means to explore the choice process, how this may impact the design of a DCE and what the consequences are of failing to incorporate explicitly this stage into the development of a DCE.

This paper aims to address this gap in the literature and presents a case study of the process that was used to design a DCE survey to assess youth preferences for family planning services in rural Malawi. We focus on the development of a decision map as an additional step in the DCE development and design process, and describe how the decision map was used to understand the choice processes and guide the design of the survey. The approach used is divided into six stages including: (1) a review of the literature, (2) the development of a decision map, (3) a series of focus group discussions and key informant interviews, (4) analysis of the qualitative data and identification of attributes and levels, (5) selecting the choice format, and (6) selecting the experimental design. This paper will describe stages 1–5 with an emphasis on the development of the decision map as a novel element of the process of developing the survey tool. Aspects of experimental design and piloting of the initial tools will be reported elsewhere.

Study background and setting

The aim of the overall research project was to understand the determinants of demand for integrated sexual and reproductive health (SRH) and HIV services delivered to young people 15–24 years of age in rural Malawi with a focus on preferences for outreach services. The study was conducted in Traditional Authority Makwangwala, Ntcheu District, Malawi. This area was selected in partnership with the Family Planning Association of Malawi (FPAM), a local non-governmental organisation (NGO) with plans to expand current outreach service delivery operations within the area following the DCE. Six research communities were selected from 15 villages where permission had been granted by local authorities and where FPAM did not have well established outreach programmes.

Ethical approval for this work was granted from the London School of Hygiene and Tropical Medicine Research Ethics Committee and the University of Malawi, College of Medicine Research Ethics Committee.

Literature review

The literature review focused on published work relating to the demand for SRH and HIV services among young people in Sub-Saharan Africa. The search was conducted using Pubmed and search terms included combinations of the following keywords: youth preferences, youth-friendly services, teen-friendly services, sexual and reproductive health, HIV services, outreach services, mobile services, barriers, youth, young people, adolescent(s) and Africa. Only articles available in English published between 2000 and 2010 were considered. Articles retrieved included youth reported perspectives on topics including unmet need for SRH and HIV services, preferences for different SRH service providers, barriers and facilitators to accessing services, types of youth-friendly

services and factors influencing uptake of SRH services. Additional articles were obtained through searches of sexual health journals and reference lists of retrieved articles.

The literature highlights unmet demand for SRH services and delays in treatment seeking amongst sexually active youth. Unmet demand is characterised by a desire to seek services but failure to access services as a result of lack of knowledge about where services are available, a lack of knowledge about reproductive health and rights, distance to a health care provider, cost, shyness, unfriendly service providers and provider refusal to provide services (Atuyambe, Mirembe, Johansson, Kirumira, & Faxelid, 2005; Erulkar, Onoka, & Phiri, 2005; Flaherty, Kipp, & Mehangye, 2005; Hulton, Cullen, & Khalokho, 2000; Katz & Naré, 2001; MacPhail, Pettifor, Coates, & Rees, 2008; Mmari, Oseni, & Fatusi, 2010; Nzioka, 2001, 2004; Rasch, Silberschmidt, Mchumvu, & Mmary, 2000; Wood & Jewkes, 2006). Other barriers to accessing SRH services include confidentiality concerns and inconvenient service delivery times (Atuyambe et al., 2005; Berhane, Berhane, & Fantahun, 2005; Biddlecom, Munthali, Singh, & Woog, 2007; Flaherty et al., 2005; Kipp, Chacko, Laing, & Kabagambe, 2007). Community acceptance and beliefs about who should use family planning services are also likely to have an impact on service utilisation (Erulkar et al., 2005).

Some studies indicate that young people may choose different providers according to the service that they require (Amuyunzu-Nyamongo, Biddlecom, Ouedraogo, & Wood, 2006; Biddlecom et al., 2007; Oye-Adeniran et al., 2005). Evidence that increased service availability and acceptability can lead to increased uptake of SRH and HIV services is mixed (Mathews et al., 2009; Mmari & Magnani, 2003) and youth report a desire for more youth-friendly services to be made available (Forrest et al., 2009). Concepts of youth-friendliness vary but confidentiality, service provider attitude and skill, convenient opening hours with short waiting times are generally viewed positively and youth only services are not necessarily preferred (Amuyunzu-Nyamongo et al., 2006; Berhane et al., 2005; Biddlecom et al., 2007; Flaherty et al., 2005; Forrest et al., 2009).

The results of this review suggest that young people in Africa do not categorically prefer a particular type of service provider. Rather, they express a desire for non-judgmental service providers (Flaherty et al., 2005; Forrest et al., 2009; MacPhail et al., 2008) and value aspects related to cost and service quality (Erulkar et al., 2005). However, the relatively low rates of service utilisation seen among sexually active youth suggest that they may face particular or additional challenges to accessing SRH services. This may be because some barriers to access remain unidentified or due to heterogeneity of preferences across gender, age categories, socioeconomic, marital or educational status or geographic location which have not been addressed in the design and delivery of services intended for youth (Berhane et al., 2005; Mmari et al., 2010).

Mapping the decision process

Following the literature review, a conceptual map of the decision process that young people in Malawi may face when choosing an FP service provider was developed. This process is described below.

Characterising demand

The starting point for the decision map was to divide youth into two categories: service users and non-users. We then outlined some of the reasons an individual might fall into a particular group (see Fig. 1). Service users were defined as individuals who have experience in accessing SRH services. Service users have an

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