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Research paper

Safe havens and rough waters: Networks, place, and the navigation of risk among injection drug-using Malaysian fishermen

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ABSTRACT

Background: HIV prevalence among Malaysian fishermen is ten times that of the general population. Fishing boats are a key place where drug use occurs, but we know little about how these environments shape HIV risk behaviour. Utilizing Rhodes' 'risk environment' framework, we assessed drug use contexts and how characteristics of place associated with fishing and fishermen's social networks served as key axes along which drug use and HIV risk behaviour occurred.

Methods: Data were collected during 2009–2011 in Kuantan, a fishing port on the eastern coast of Malaysia, and include 28 in-depth interviews and 398 surveys collected using RDS. Logistic regression was used to determine the effect of occupational, network and risk environment characteristics on unsafe injection behaviour and access to clean needles/syringes; qualitative data were coded and analyzed thematically.

Results: Drug injecting was common and occurred on boats, often with other crewmembers. Captains and crewmembers were aware of drug use. Unsafe injection practices were significantly associated with having a larger proportion of drug injectors in network (OR = 3.510, 95% CI = 1.053–11.700) and having a captain provide drugs for work (OR = 2.777, 95% CI = 1.018–7.576). Size of fishermen network (OR = 0.987, 95% CI = 0.977–0.996), crewmembers' knowledge of drug use (OR = 7.234, 95% CI = 1.430–36.604), and having a captain provide drugs for work (OR = 0.134, 95% CI = 0.025–0.720) predicted access to clean needles/syringes. Qualitative analyses revealed that occupational culture and social relationships on boats drove drug use and HIV risk.

Conclusions: While marginalized in broader society, the acceptance of drug use within the fishing community created occupational networks of risk. Fishing boats were spaces of both risk and safety; where drug users participated in the formal economy, but also where HIV risk behaviour occurred. Understanding the interplay between social networks and place is essential for developing HIV prevention and harm reduction policies appropriate for the unique needs of this fishing population.

Introduction

Fishermen are a high-risk group for HIV, having higher HIV rates than other typically at-risk groups, like truck drivers and military personnel (Kissling et al., 2005). Despite this, fishermen and their communities remain under-researched, especially in Southeast Asia. In Malaysia, there is particular cause for concern as estimates suggest that fishing communities have an HIV prevalence rate 10 times that of the general population (Kissling et al., 2005). While only 1.3% of the working population is employed in the fishing industry (Department of Statistics Malaysia, 2005), fishermen constitute 3.8% of the total reported HIV cases in the country (Ministry of Health Malaysia, 2008). The dearth of research on fishing communities underscores the need for a greater understanding of the social determinants of HIV risk among fishermen. Integral to this understanding is an examination of social networks and how local environments and broader social, economic, and occupational factors shape HIV risk behaviour.

Despite the substantial focus in public health on behaviour change models, there is increasing attention to the ways in which health priorities and behaviours are shaped by larger social structures that intersect with biological, psychological and network

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processes to determine health and well-being (Farmer, 2005; Krieger, 1994; Parker, Easton, & Klein, 2000; Susser & Susser, 1996). These processes provide both the context within which HIV risk behaviour occurs and the opportunities people have to navigate risk (Cockerham, 2005; Rhodes, 1997). For HIV and drug use, this particular social and physical space is referred to as a 'risk environment' (Rhodes, 2002). The risk environment framework posits that environmental factors, like social, economic, policy, and physical context, interact at different levels of influence (micro, macro) to increase the chances of harm occurring (Rhodes, 2002). Place is particularly important because it is an 'assemblage of personal networks and environmental characteristics which work together to enhance or impede the experience of health and well-being' (Frohlich, Corin, & Potvin, 2001).

Among fishermen in this study, previous analyses suggest that injection drug use plays a significant role in HIV transmission: while 12.4% of study participants tested positive for HIV at the time of interview, most fishermen (77.1%) reported no sexually activity (with men or women) in the past 3 months, and having a history of injection drug use was significantly associated with HIV seroprevalence. While fishermen's high mobility is often cited as a key factor driving HIV transmission (Entz, Prachuabmoh, van Griensven, & Soskolne, 2001; Kissling et al., 2005), less attention has been paid to the places where fishermen interact and drug use occurs, like boats, and how occupational characteristics may shape networks to create a unique risk environment. This paper utilizes qualitative and survey data to examine the intersection of place and social networks among fishermen in Kuantan, Malaysia. Specifically, we investigate how network relationships with crewmembers and captains and occupational characteristics associated with fishing intersect to shape unsafe injection practices and access to clean needles/syringes. The overall goal is to inform policy by providing important insight into HIV risk behaviour through the elucidation of the social context of drug use, network relationships, and risk navigation opportunities.

Background

The risk environment approach emphasizes how experiences of and responses to HIV risk are socially and locally situated, driven by external environmental and social conditions that shape everyday practices and increase harm among people who inject drugs (PWID) (Rhodes, 2009). Specifically, risk environment research has demonstrated the connection between environmental conditions and needle/syringe sharing (Rhodes et al., 2003; Strathdee et al., 2008). A key component of risk environment research is the role of 'place' in creating the spatial context, whether physical, social, economic, or political, where HIV risk occurs (Tempalski & McQuie, 2009). Research on place demonstrates that local characteristics of place, like geographic residence, social disorder, police tactics, levels of isolation, and policies toward drug users, create risk environments associated with HIV infection and injection risk behaviour (Bluthenthal, Kral, Erringer, & Edlin, 1999; Bourgois, Lettiere, & Quesada, 1997; Cooper, Moore, Gruskin, & Krieger, 2005; Latkin & Knowlton, 2005; Maas et al., 2007; Tempalski, 2007). Research also highlights how local social networks are instrumental in navigating the structural constraints that drive HIV risk behaviour and increase harm among PWID (Duff, 2009).

The linkage between social networks and health warrants particular attention when attempting to understand fishermen's risk environments. Social connections can constrain or enable actors by blocking or encouraging possibilities for action, by constructing identities and goals, by providing social support, and by establishing and enforcing collective norms (Emirbayer & Goodwin, 1994; Szreter & Woolcock, 2004). Social networks can also contribute to HIV-related risk behaviours and health outcomes among drug users (Curtis et al., 1995; Friedman et al., 1998, 1997; Friedman, Curtis, Neaigus, Jose, & Des Jarlais, 1999; Koram et al., 2011; Neaigus et al., 1996; Suh, Mandell, Latkin, & Kim, 1997; Weeks, Clair, Borgatti, Radda, & Schensul, 2002). According to a recent review, network size, density position and turnover; network member characteristics, role and the quality of relationships; and injecting norms, patterns of drug use, and severity of drug addiction can all contribute to drug-related HIV risk behaviour (De, Cox, Boivin, Platt, & Jolly, 2007).

Assessing the local environment becomes particularly important to understanding how environments can both contribute to HIV risk behaviour and to the development of community resilience through social networks, which generate social capital, informal support, solidarity and belonging (Duff, 2009; Friedman et al., 2007; Rhodes, 2009). These studies highlight how 'place' can be a mediator of health outcomes as it encompasses the intersection of personal networks and environmental characteristics (Duff, 2009). In the Malaysian fishing context, we posit that boats act as key places where networks intersect and where HIV risk behaviour occurs.

Methods

The data for this analysis were pulled from Project WAVES, which is a collaboration between the Centre of Excellence for Research in AIDS (CERiA) at the University of Malaya and the Social Intervention Group at Columbia University. The study was conducted in Pahang state around the Kuantan jetty, one of the busiest fishing jetties in the country and the centre of the commercial fishing industry on the east coast of peninsular Malaysia. Fishermen were eligible if they were 18 years or older and reported fishing as their primary occupation during the past year. This analysis pulled from both qualitative and quantitative data. The qualitative data were used to provide context for the interpretation of key constructs and to inform quantitative findings. The use of mixed methods allowed for the triangulation of data from multiple sources and methods, thus counterbalancing possible deficiencies of a single approach.

Data collection

From December 2009 to February 2010, semi-structured in-depth interviews were conducted with 28 fishermen reporting recent drug use. They were recruited at two fishing ports and from a neighbouring fishing village. To be eligible, fishermen had to report doing drugs either on their last trip to sea or upon returning to shore. Participants were recruited with the assistance of two male facilitators who worked locally as needle/syringe exchange outreach workers. Interviewees were paid 50 Malaysian Ringgit (RM) for participation in the study (50RM = $15). Interviews were conducted in Bahasa Melayu, by trained local interviewers, were transcribed in Bahasa Melayu, and then translated into English.

Fishermen are a highly mobile population and drug users are often 'hidden' because of criminalization and stigma, making sampling a challenge. Respondent-driven sampling (RDS), a coupon-based chain-referral method, has shown promise in overcoming some of these obstacles (Heckathorn, 1997, 2002; Salganik & Heckathorn, 2004) and is an economical and time-efficient recruitment method, which has been successful for recruiting PWID (Abdul-Quader et al., 2006; McKnight et al., 2006; Robinson et al., 2006). Other forms of chain-referral sampling are criticized for over-reliance on the characteristics of the initial sample and bias towards more cooperative subjects; however, RDS uses a statistical technique that mathematically corrects for these tendencies