



## The epidemiology of spirit possession in the aftermath of mass political violence in Mozambique<sup>☆</sup>

Victor Igreja<sup>a,\*</sup>, Beatrice Dias-Lambranca<sup>b</sup>, Douglas A. Hershey<sup>c</sup>, Limore Racin<sup>d</sup>, Annemiek Richters<sup>e</sup>, Ria Reis<sup>e,f</sup>

<sup>a</sup>The University of Queensland, Institute for Social Science Research/ACPACS, Level 2, Building 31B, St. Lucia, Brisbane, Queensland 4072, Australia

<sup>b</sup>Independent Scholar, Brisbane, Australia

<sup>c</sup>Psychology Department, Oklahoma State University, 116 North Murray Hall Stillwater, Oklahoma 74078, USA

<sup>d</sup>The New School of Psychology, Interdisciplinary Centre (IDC), P.O. Box 167, Herzliya 46150, Israel

<sup>e</sup>Department of Public Health and Primary Care, Leiden University Medical Center, The Netherlands

<sup>f</sup>Medical Anthropology & Sociology Unit, University of Amsterdam, The Netherlands

### ARTICLE INFO

#### Article history:

Available online 12 May 2010

#### Keywords:

Mozambique

Violence

Spirit possession and symptoms

Health-seeking behaviour

Postwar context

### ABSTRACT

In this article we assess the prevalence rates of harmful spirit possession, different features of the spirits and of their hosts, the correlates of the spirit possession experience, health patterns and the sources of health care consulted by possessed individuals in a population sample of 941 adults (255 men, 686 women) in post-civil war Mozambique in 2003–2004. A combined quantitative–qualitative research design was used for data collection. A major study outcome is that the prevalence rates vary according to the severity of the possession as measured by the number of harmful spirits involved in the affliction. The prevalence rate of participants suffering from at least one spirit was 18.6 percent; among those individuals, 5.6 percent were suffering from possession by two or more spirits. A comparison between possessed and non-possessed individuals shows that certain types of spirit possession are a major cause of health impairment. We propose that knowledge of both local understandings of harmful spirit possession and the community prevalence of this kind of possession is a precondition for designing public health interventions that sensitively respond to the health needs of people afflicted by spirits.

© 2010 Elsevier Ltd. All rights reserved.

### Introduction

In the scientific literature, epidemiological studies in postwar communities that centrally consider local understandings of spirit possession, possession prevalence rates and concomitant symptoms are rare. This article aims to fill this gap. In the psychiatric and anthropological literature, two forms of dissociative phenomena are identified: possession trance and dissociative trance (DSM-IV-TR, APA 2000; Bourguignon, 1973). Possession trance involves the “replacement of the customary sense of personal identity by a new identity” (DSM-IV-TR, *ibid.*: 532). The agents involved in these

replacements “are usually spiritual in nature (e.g., spirits of the dead, supernatural entities, gods, demons) and are often experienced as making demands or expressing animosity” (DSM-IV-TR, *ibid.*: 784). Subsequent to a possession trance episode the host experiences post-fact amnesia. During dissociative trance, the loss of customary identity is not associated with the appearance of alternate identities (Bourguignon, 1973).

These two definitions are relevant working definitions as long as it is acknowledged that spirit possession is not an ahistorical phenomenon; its practices and symptoms change as a result of the impact of major stressors in society. Ethnographic studies carried out in different societies consider spirit possession as a dynamic and polysemic phenomenon. It is part of organized religious beliefs and practices that contribute to the healing of ill-health. Spirit possession also presents commentaries on and may offer solutions to moral crises that affect society (Lambek, 1981; Masquelier, 2001; Reis, 2000). In contexts of political violence, spirits protect people from psychic trauma and despair (Rosenthal, 2002) and the actions of war-related ghosts (interchangeably called spirits) function as coping and remembering mechanisms (Kwon, 2008; Perera, 2001).

<sup>☆</sup> We would like to thank the participants who took part in this study and our local team for their valuable assistance. Extended thanks to the anonymous reviewers for their helpful comments and suggestions; we are grateful for the editorial work of Anna Nolan and Rachel Crawford and for the support of the late Professor Peter Riedesser (University of Hamburg), Netherlands Organization for Scientific Research, Leiden University Medical Center and the Australian Center for Peace and Conflict Studies, The University of Queensland.

\* Corresponding author. Tel.: +61 733468796.

E-mail address: [v.igreja@uq.edu.au](mailto:v.igreja@uq.edu.au) (V. Igreja).

The anthropological literature also acknowledges the existence of “possession sickness” (Sharp, 1994) or “harmful spirit possession” in the sense that in some societies people also attribute the aetiology of varied illnesses to spirit possession. Harmful spirit possession contributes to an array of debilitating illnesses: excessively long and heavy menstruation (Spring, 1978), fertility disorders among women, miscarriages, infant mortality, stomach ache, chronic headaches and dizziness (Boddy, 1989; Sharp, 1994). The accumulation of these health problems creates family instability and may contribute to the occurrence of divorce (Igreja, Kleijn, & Richters, 2006). In war-torn societies, exposure to violence increases the prevalence of spirit possession afflictions (De Jong, 2002; Marlin, 2001), and possession by war-related spirits contributes to the severity of psychotraumatic symptoms (Igreja et al., 2009, 2006).

In spite of the burden of harmful spirit possession in non-Western societies, its centrality as an idiom of distress, and the apparent increase in cases of spirit possession caused by war violence, hardly any epidemiological studies of this type of possession have been undertaken in societies affected by mass political violence. This represents a serious gap in knowledge of an ill-health predicament that exerts an overwhelming toll among afflicted individuals. Hitherto the very few epidemiological studies using population-based samples (Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993; Martinez-Taboas, Canino, Wang, Garcia, & Bravo, 2006; Ross, 1991) were conducted in countries that did not go through mass political violence, such as civil wars, in the recent past. Epidemiological studies of harmful spirit possession are necessary to address the lack of scientific knowledge and to contribute to the formulation of effective health policies and health care practices. Before stating our main goals, we describe the sociocultural and political context of spirit possession in Mozambique.

### Spirit possession in postwar Mozambique

In central Mozambique, the practice of possession has deep historical and cultural roots. Spirit possession is enacted through a separation of the identity and agency of the spirits and the identity and agency of their hosts; in a state of possession trance the individuals are technically called *txiquiro* (host). In this region, there are a myriad of ancestral and non-ancestral spirits, and also animal and nature spirits. Spirits engender serious afflictions, reproduce or contest people’s cultural identity, watch over the land and perform healing in the strictest sense. The name of healing spirits and their practitioners is *dzoca*; *dzoca* is a set of ancestral spirits that for generations possess the living through agnate inheritance to exercise their healing powers. *Dzoca* spirits possess only individuals of families with a healing genealogy so that they can work as *dzoca* healers. Yet this *dzoca*’s regime of agnate exclusiveness in possession and healing can be suspended by temporary disruptions triggered by major societal catastrophes.

For instance, with the violence of the late nineteenth century in which southern warriors dominated the central region populations, harmful spirits emerged named *madwite* and *n’fukua*. These spirits display their power by possessing their hosts and wreaking havoc as a result of alleged serious past wrongdoings perpetrated by the host’s kin (Honwana, 2003; Igreja et al., 2006; Marlin, 2001). The *madwite* spirits had a reputation for re-enacting the violent behaviours of the invading southern warriors, and *n’fukua* spirits brought severe illnesses through spirit possession afflictions (although these possession states were appeased and kept hidden among the host’s family). Over time *madwite* and *n’fukua* waned and did not leave a local institutional legacy. In the late twentieth century, as a result of the Mozambican protracted civil war, *gamba*

spirits emerged. They became the principal harmful spirits and source of diagnosis (Igreja, Dias-Lambranca, & Richters, 2008).

*Gamba* refers to the spirit of male soldiers who died in the war. Possession by *gamba* is a trauma of a double derivation. First, the host and patrikin were severely exposed to warfare that led to vulnerability; and, second, to address that war-related vulnerability, the host’s patrikin were alleged to have perpetrated serious wrongdoings. When the war ended, the alleged perpetrators wished to forget the past horrors by remaining in silence. *Gamba* spirit possession is a trace of these alleged wartime evil deeds and since the cultural identity of the people in the centre of Mozambique emphasise values of collective responsibility, the kin of the alleged perpetrator are not immune from *gamba* spirits’ retaliation by causing serious illnesses. In this postwar era, *gamba* spirits evolved to create healing by being also the name of the healer specialized in *gamba* afflictions (Igreja, 2003). Unlike the *dzoca* spirits, *gamba* spirits can possess anyone in society with a personal or family history of suffering. Moreover these spirits prefer to speak through the bodies of the alleged wrongdoers or their relatives. *Gamba* spirits refuse the attempts of the living to discretely appease them; they want justice, which is obtained through public performances and healing. If such performances are not offered, the host is doomed to suffer. The continuity of torment is part of the local ethic of reciprocity, which holds that conflicts stemming from serious injuries leading to death continue unless they are appropriately redressed (Igreja, 2010). During possession trance, *gamba* spirits publicly re-enact war-related events and while doing so are violent towards the host’s patrikin. To the audience these performances evoke war memories that had been hidden and for the host/patient these performances evince severe suffering. This suffering is considered unbearable in cases of possession involving multiple *gamba* spirits.

In the context of this study, people distinguished an array of spirits next to *gamba* and *dzoca*. They identified two key forms of spirit possession based on their phenomenology: *ku tekemuka* (the equivalent of dissociative trance) and possession trance. In the former case, the individual shakes, screams and sheds tears and, after this episode, may experience partial amnesia. In the case of possession trance the spirit takes full control of the body to the extent of voicing its identity and the aetiology of the possession, and subsequently the host experiences total amnesia.

### Research objectives and approach

This epidemiological study has five major objectives. We studied:

- 1) The prevalence rate of self-reported spirit possession among all members of our sample of 941 adults (255 men, 686 women), as well as correlates of the spirit possession experience. In line with this latter goal, we examined eight different individual variables as predictors of the possession experience, including: age, gender, socioeconomic status, scores on the Harvard Trauma Questionnaire (HTQ), the prevalence of troubling physical symptoms, the incidence of reproductive difficulties, and incidences of infant natality and mortality;
- 2) The prevalence of specific reproductive health and physical ailments among members of the study. Among all female respondents we examined problems with menstruation, difficulties conceiving a child, and lost pregnancies. Among all members of the sample group we examined health difficulties such as headaches, stomach and rib pain, poor appetite, difficulties breathing, insomnia, nightmares (war-related/non-war-related), nightmares involving men and women. Other difficulties were divorce and infant mortality;

- 3) The nature of the spirit possession for members of the *ku tekemuka* and possession trance groups. We investigated the number of spirits involved in the possession experience, the reported degree of the spirit possession's intrusions, and the degree of awareness of the spirit when it manifests itself and the context of the spirit's manifestation. In line with this analysis we examined the characteristics of the spirit(s) as described by affected respondents. Hence, we asked possession trance and *ku tekemuka* respondents questions about whether they could identify the origin of the spirit, the spirit's gender and the language in which the spirit communicates;
- 4) The correlates of the severity of the possession state by analysing those individuals possessed by a single spirit and those possessed by multiple spirits to determine whether they experienced differences in reproductive difficulties and health problems; and
- 5) The sources of support visited by possessed individuals in an effort to find relief for their suffering.

## Method

### Research sites, participants and ethical considerations

The study was conducted in various villages of the rural districts of Gorongosa (Sofala Province) and Barue (Manica Province), both in the centre of Mozambique. In Gorongosa there are 92,555 inhabitants and in Barue 137,352 inhabitants. Both districts are patrilineal societies with patrilocal rules of residence. The family constitutes the basic unit of society, the man is usually the head of the household, and families are usually monogamous or polygamous.

Both districts were selected for this study because they had been affected by the Mozambican civil war (1976–1992) between the Frelimo government army and the rebel movement Renamo. The civil war was very divisive and belligerent from both sides committed serious crimes against the civilians who lived within the war-zones. Sexual persecution and rape of women was widespread. Both at the instigation of soldiers and due to the harsh circumstances of the war, many villagers were allegedly drawn into the perpetration of serious abuses and crimes. The severe droughts of 1988–1989 and 1990–1992 also devastated both districts. Following the war's end in 1992, the official authorities (Frelimo) developed a policy of silence vis-à-vis the war events and they enacted an unconditional amnesty law. The war survivors in former war-zones attempted to forget the war and engage in various agricultural and healing activities to address the suffering that remained as a legacy of the war (Igreja et al., 2009).

To obtain consent for the research, the goals of the study were presented to the local authorities and the residents in the two districts. District residents gave their verbal consent. This study also received the IRB approval from the Netherlands Organization for Scientific Research. The participants were randomly selected based on the geographic dispositions of their households. The inclusion criteria were that participants had to be 1) a permanent resident of one of these districts and 2) over 12 years old, which was locally considered the minimal age for a person to be afflicted by spirits. The exclusion criteria were that participants should not be 1) a healer or in the training process to become a healer because in such cases spirit possession is a positive experience, nor 2) a member of a Christian religious group who stated to have regular possession experiences with the Holy Spirit, as such spirit possession is considered beneficial instead of harmful.

The ages of the participants ranged from 13 to 60 years. All participants were farmers. Geographically, the participants from Gorongosa district were  $N = 740$  and from Barue  $N = 201$ . The gender disparities (255 men, 686 women) were the result of the

dynamics of the fieldwork. Women were more accessible than men because of their traditional work roles; it was more common to find women at home than men because the latter were busy outside the home or they were away travelling. The other reason was that among the married households the percentage of polygamous families was relatively high and in each of these households we interviewed the husband and all his wives. At the time of testing, the main demographic characteristics of all participants were as follows: 81% were married, 8.6% single, 7.2% widowed and 3.2% divorced. The types of families were divided among monogamous (57.7%), polygamous (31.6%) and other (10.7%). The mean family size was 7.38 ( $SD = 3.81$ ) in a range of 1–21 members. In terms of family and marriage experiences, the majority of participants married only once (61.8%) against 31.3% who married two or more times and 6.8% who had never married. Experiences of divorce follow a similar trend: 75.7% never divorced, 21% divorced one time, and 3.3% divorced more than twice. As for the history of widowhood, 89.7% had never experienced widowhood during the course of their lives, and 10.3% had experienced it more than once.

### Research approach and instruments

To conduct our epidemiological study we used locally derived criteria in order to relate to people's knowledge of health, illness and health-seeking behaviour. The study combined qualitative and quantitative methods in the form of a semi-structured questionnaire. This questionnaire comprised the following sections and themes: 1) Demographic characteristics (13 items) and traumatic experiences as measured by an adapted version of the Harvard Trauma Questionnaire (HTQ) (Mollica et al., 1996), with an addition of ten wartime traumatic event items, which had initially been elicited through previous interviews (Igreja et al., 2009, 2006) (henceforth HTQ+10); 2) Family support (5 items); 3) Socioeconomic status (10 items); 4) Suffering with spirits at the moment of the study and its severity as determined by the quantity of spirits (2 items); 5) The context of harmful spirit possession outset (5 items); 6) The spirit's volition: degree of intrusiveness, frequency, origin of the spirit (father or mother's lineage, or from community neighbours), degree of awareness during possession states, and degree of suffering including a description of these experiences of suffering (5 items); 7) Characteristics of the spirit (5 items); 8) Concomitant symptoms (8 items); 9) Problems with reproductive health (3 items); 10) Health-seeking behaviour (6 items).

### Data analysis

The analysis process was carried out in four stages. In the first stage, we examined the extent to which differences exist regarding the correlates of spirit possession. We determined whether the correlates of possession trance and *ku tekemuka* were statistically distinguishable from the correlates of non-possessed individuals. The preliminary result of this stage paved the way for second stage follow-up analysis focusing on group differences in the characteristics of the spirit possession experience exclusively among members of the two affected groups. The third stage of the analysis process was aimed at identifying the prevalence of reproductive and physical health problems associated with the two different possession states. In the fourth and final stage of the analysis, we focused on the different support providers possessed individuals consult in an attempt to seek relief from their condition. Before initiating the analysis, all data distributions were checked for evidence of skew, kurtosis, outliers and other distorting properties that might violate the standard assumptions of general linear model statistics. All distributions were found to be reasonable in this regard.

**Results**

*Prevalence rate and correlates of possession phenomena*

The data reveal that of the 941 individuals who were surveyed for this study, 175 (18.6 percent) reported some form of spirit possession and among these 5.6 percent had experienced multiple simultaneous spirit possession.

In an attempt to determine whether possession trance and *ku tekemuka* were statistically distinguishable from the non-possessed state, a multinomial logistic regression analysis was conducted. In this analysis, individuals who did not report being afflicted by spirits were used as the reference group. Covariates included age, gender, socioeconomic status, the HTQ+10 total score, the number of physical symptoms reported, the prevalence of reproductive health problems, self-reported infant mortality and infant natality. The overall regression was significant, LR  $\chi^2(16) = 117.04, p < .01$ , Nagelkerke pseudo- $R^2 = .29$ . Beta weights, standard errors, and significance levels for the eight predictor variables are shown in Table 1 (non-possessed individuals are not shown in this table as they are members of the reference group in this analysis). As seen in the table, the three significant predictors for members of both afflicted groups were gender, the number of physical symptoms experienced, and infant natality. The beta coefficients reveal that relative to members of the non-possessed group, in both possessed groups women were more likely to be affected than men, possessed individuals were significantly more likely to experience troubling physical symptoms, and possessed individuals had fewer experiences of child birth than those who reported not being possessed. Moreover, those in the possession trance group displayed a trend toward higher scores on the HTQ+10 and significantly higher experiences of infant mortality relative to individuals who were not possessed.

In this stage of the analysis we examined the reproductive health difficulties experienced by women in the study, and the general health difficulties experienced by all study participants. An omnibus contingency coefficient (C) was calculated for each of twelve different health and reproductive difficulties to determine whether any differences in prevalence rates were observed across the three groups. In cases in which C was significant, follow-up pair-wise subgroup comparisons were carried out. As seen by the (C) values reported in Table 2, three of the four reproductive difficulties show significant differences between non-possessed individuals and those who experienced spirit possession (the exception being lost pregnancies). Moreover, those with *ku tekemuka* experienced a greater incidence of

**Table 1**  
Multinomial logistic regression analysis examining predictors of possession trance and *ku tekemuka* in relation to members of the non-possessed group.

Variable N = 471	Possession trance		<i>Ku tekemuka</i>	
	b	(SE <sub>b</sub> )	b	(SE <sub>b</sub> )
<b>Predictors</b>				
Age	.010	(.035)	-.025	(.037)
Gender	-2.207**	(.644)	-1.273*	(.531)
Socio-economic status	-.005	(.102)	-.086	(.100)
Harvard Trauma Questionnaire+10	.071†	(.038)	.017	(.032)
Number physical symptoms	.410**	(.090)	.323**	(.092)
Reproductive health	.078	(.336)	.391	(.357)
Infant mortality	.584**	(.216)	.207	(.226)
Infant natality	-.259*	(.109)	-.243*	(.113)
Constant	-4.53**	(1.01)	-3.29**	(.955)

\*p < .05; \*\*p < .01; †p < .10.

**Table 2**

Percentage of women who reported experiencing reproductive difficulties and general health problems, as well as corresponding contingency coefficient values.

	Non-possessed	Possession trance	<i>Ku tekemuka</i>	C value (p-level)
<i>Reproductive difficulties</i>				
Difficulties with menstruation	21.3 a	36.2 b	27.9 ab	.124*
Difficulties becoming pregnant	23.4 a	44.6 b	34.4 ab	.172*
Lost pregnancy (miscarriage)	27.2 a	34.9 a	31.7 a	.063
Difficulties having children	22.7 a	44.9 b	45.5 b	.198*
<i>General health difficulties</i>				
Headaches	68.5 a	82.7 b	77.5 ab	.105*
Stomach pain	48.6 a	63.5 b	74.6 b	.157*
Pain in ribs	24.0 a	43.7 b	45.1 b	.174*
Poor appetite	46.5 a	70.2 b	73.2 b	.191*
Difficulties breathing	15.3 a	39.4 b	31.0 b	.206*
Nightmares (war-related/non-war-related)	78.7 a	89.4 b	95.8 b	.136*
Nightmares involving men	35.4 a	66.0 b	66.1 b	.241*
Nightmares involving women	29.5 a	26.0 a	29.0 a	.025

\*p < .01. Note: Percentages within a row that shares the same letters are not significantly different from one another at the .05 level.

difficulties having children than non-possessed individuals. No differences were observed with respect to reproductive difficulties between possession trance and *ku tekemuka* respondents.

Major group differences were also observed in relation to troubling general health symptoms. In fact, the observed prevalence rates for six of the eight physical health symptoms revealed a pattern in which symptoms occurred significantly more frequent among afflicted individuals' (possession trance and *ku tekemuka*) than in non-possessed individuals. This was the case for stomach pain, rib pain, poor appetite, difficulties breathing and different types of nightmares: nightmares with war contents in general, war-related nightmares specifically involving sexual assaults perpetrated by men, and non-war-related nightmares. Only nightmares involving women failed to show a difference in prevalence rates across the three groups. Headaches occurred more frequently among possession trance individuals relative to non-possessed persons, but neither of these two groups differed from the rate found among those in the *ku tekemuka* group.

*Characteristics of the possession experience*

Table 3 shows a summary of results for members of the possession trance group, the *ku tekemuka* group and all afflicted individuals combined. The values in the table are either the proportion of individuals who answered "yes" to a yes/no question, or the proportion of individuals who selected a particular categorical response option. Tests of independent proportions were used to determine whether the groups were significantly different from one another.

As seen in the table, approximately two-thirds of individuals reported being possessed by one spirit, with the remainder being possessed by two or more spirits. In terms of group differences, members of the *ku tekemuka* group were more likely to have one spirit possess them ( $z = 2.31, p < .05$ ), whereas those who experienced possession trance were more likely to be possessed by multiple spirits ( $z = 2.21, p < .05$ ). Moreover, about half of all respondents reported having experienced the intrusions of spirits

**Table 3**

Characteristics of the experience as reported by individuals who encounter possession trance, *ku tekemuka*, and by all afflicted respondents (percentages).

Question respondents	Possession trance (N = 104)	<i>Ku tekemuka</i> (N = 71)	z-score (p-level)	All afflicted (N = 175)
Number of spirits that possess the individual?				
One	56.1	80.0	2.31*	62.4
Two or more	43.9	20.0	2.21*	37.6
Experienced the spirit multiple times?				
Yes	58.6	41.8	1.99*	51.8
When the spirit comes out are you aware of it?				
Yes	5.0	16.9	2.28*	9.7
Does the spirit cause you suffering?				
Yes	85.0	90.8	.89	87.3
When does the spirit come out?				
It comes out by itself	69.6	60.6	1.04	66.1
During a healing session for the spirit	13.7	30.3	2.32*	20.2
When I want it to	8.8	.0	2.17*	5.4
In church	5.9	7.6	.19	6.5
Other	2.0	1.5	.36	1.8

\* $p < .05$ ; \*\* $p < .01$ .

Note: The reported z-scores reflect the outcome of tests of independent proportions.

<sup>a</sup> As this variable was scored at the interval level of measurement, a *t*-test (as opposed to a test of independent proportions) was used to compare group means.

multiple times, particularly more often among individuals in the possession trance group,  $z = 1.99$ ,  $p < .05$ .

The data also revealed that only about one in ten individuals is consciously aware of the spirit when it manifests itself, with this being true significantly more often among members of the *ku tekemuka* group,  $z = 2.28$ ,  $p < .05$ . Moreover, the spirit is a clear cause of suffering among nearly 90 percent of those who are afflicted, with no differences found among members of the two groups.

Differences were also observed regarding the context in which the spirit emerges in the body, with it appearing most often “by itself” (i.e., when it chooses to emerge). This is true in two-thirds of the cases, with no differences observed across groups. About one-fifth of the time the spirit emerges during a healing session, but this is more likely the case for those who suffer from *ku tekemuka* than those who are possessed,  $z = 2.32$ ,  $p < .05$ . Some who are possessed (about 9 percent) can make the spirit come out when they want it to do so, which does not seem to be the case among those in the *ku tekemuka* group,  $z = 2.17$ ,  $p < .05$ .

#### Characteristics of the spirit(s)

Table 4 also shows summary results (proportions) for members of the possession trance group, the *ku tekemuka* group, and all afflicted individuals combined. As in the previous set of analyses, tests of independent proportions were used to compare frequency rates for the two subgroups.

As seen in the table, the spirit is overwhelmingly perceived as originating from one’s patrikin, which is the case in some two-thirds of the cases. Other sources of the spirit include one’s mother or the house of the woman’s in-laws. A number of respondents did not know where the spirit originated. This lack of awareness of the origin of the spirit (i.e., a “don’t know” response) was statistically more prevalent among members of the *ku tekemuka* group, who endorsed this response option one-third of the time,  $z = 3.14$ ,  $p < .01$ . Furthermore, among members of the possession trance group, the spirit was overwhelmingly male. This was true in three-quarters of all trance cases, but only in about half the cases involving those with *ku tekemuka*, which was a reliable difference,  $z = 2.28$ ,  $p < .05$ . Significantly more members of the *ku tekemuka* group did not know the gender of the spirit, which makes sense

**Table 4**

Characteristics of the spirit as reported by individuals who experience possession trance, *ku tekemuka*, and by all afflicted respondents (percentages).

Afflicted items respondents	Possession trance (N = 104)	<i>Ku tekemuka</i> (N = 71)	z-score (p-level)	All (N = 175)
<i>Origin of the spirit</i>				
Father	71.6	59.7	1.45	66.9
Mother	9.8	6.0	.64	8.3
House of the woman’s in-laws	3.9	.0	1.16	2.4
Mother and father	2.9	.0	.80	1.8
Other	.0	1.5	.22	.5
Don’t know	11.8	32.8	3.14**	20.1
<i>Gender of the spirit</i>				
Male	75.2	56.7	2.28*	67.9
Female	7.9	6.0	.19	7.1
Male and female	5.9	3.0	.52	4.8
Don’t know	10.9	34.3	3.44**	20.2
<i>Language spoken by the spirit</i>				
Gorongosa (local language)	30.4	23.1	.81	27.5
Ndau	23.5	3.1	3.43**	15.6
Chi Sena	11.8	.0	2.62*	7.2
Barue	6.9	.0	1.80	4.2
Mute (no language)	2.9	15.4	2.53*	7.8
Other	6.8	.0	1.80	4.2
Don’t know	17.6	58.5	5.30**	33.5

\* $p < .05$ ; \*\* $p < .01$ .

Note: The reported z-scores reflect the outcome of tests of independent proportions.

given that they had not yet perceived the spirit directly speaking through them.

The last item in Table 4 shows the self-reported language spoken by the spirit. Among those who experienced possession trance, the language of the spirit was overwhelmingly Gorongosa, followed by Ndau and Sena. Just over half of the individuals in the *ku tekemuka* group (58 percent) did not know which language the spirit spoke, which again is not surprising given that in this condition the spirit doesn’t actually speak through the individual.

Table 5 presents the results regarding the reported types of spirits responsible for the harmful possessions and ill-health outcomes. The most reported harmful spirit was *gamba* (59.8%), followed by *dzoca* (ancestral spirits) (9.5%) and *dzhinhambuia* (ancestral spirits of the great grandmother) (2.4%); 23.7% of the participants did not know the identity of the spirit.

#### Correlates of the severity of the possession state

In an effort to take a more nuanced look at the spirit possession phenomenon, we investigated differences in the various characteristics of individuals who reported being possessed by one spirit, as compared to those who reported possession by two or more

**Table 5**

Spirit names as reported by individuals who had experienced possession trance or *ku tekemuka*.

Spirit name	Percentage
<i>Gamba</i>	59.8
Don’t know	23.7
<i>Dzoca</i>	9.5
<i>Dzhinhambuia</i>	2.4
<i>Gamba</i> and <i>dzoca</i>	1.8
<i>Dzhinhambuia</i>	1.2
Samukadzi	.6
Nkumbaiassa	.6
Lion	.6
Total	100.0

spirit forces at the same time (hereafter referred to as the “verging” group). This latter subset of individuals made up 5.6% of the overall sample, or alternatively, 30.1% of all individuals afflicted by spirit possession. A series of sixteen independent group *t*-tests were calculated—one for each general health problem, reproductive problem, or other difficulty (e.g., divorce). Seven of the sixteen characteristics revealed significant differences across groups at the .05 level, and in each of these seven cases the severity of the characteristic was stronger among individuals in the verging group.

Among the sixteen *t*-tests (see Table 6), a significantly larger proportion of those in the verging group (i.e., >1 spirit) reported experiencing difficulties with menstruation, headaches, stomach pain, rib pain, insomnia, difficulties breathing, and nightmares involving men. Characteristics found to be unrelated to the severity of spirit possession included: difficulties in becoming pregnant, lost pregnancy, difficulties having children, miscarriages, having a poor appetite, nightmares with war contents in general, war-related nightmares specifically involving sexual assaults perpetrated by men, and non-war-related nightmares.

#### Help-seeking behaviours of afflicted individuals

As a final analysis, we examined the sources of assistance afflicted individuals consulted in an effort to receive relief from the spirit(s). Table 7 shows that these sources include traditional and Christian religious healers, community courts, members of the police, and hospitals. These data show a trend toward those in possession trance visiting the police more often than *ku tekemuka* respondents. This effect needs to be viewed in context, as the base-rate level for this response category was quite low. The data also shows that traditional healers are the option of choice when it comes to seeking assistance for dealing with spirit possession, with nearly 86 percent of afflicted respondents choosing to visit a traditional healer. Assistance from the Christian church was also a popular help-seeking option, which was endorsed by just over half of afflicted individuals. These two sources of assistance (traditional healer and church) stand in stark contrast to assistance sought from the community courts, members of the police department and hospitals, which each account for less than 20 percent of help-seeking visits by afflicted respondents.

**Table 6**

Comparison of percentages of possessed individuals who reported difficulties as a function of the number of intruding spirits.

	One Spirit	>1 Spirit	<i>t</i> -Value
<i>Reproductive difficulties</i>			
Difficulties with menstruation	.24	.51	-3.18**
Difficulties becoming pregnant	.37	.44	-.80
Lost pregnancy	.29	.35	-.60
Difficulties having children	.47	.43	.45
Miscarriage(s)	.47	.47	.37
<i>General health difficulties</i>			
Headaches	.75	.90	-2.18*
Stomach pain	.53	.84	-3.79**
Pain in ribs	.33	.51	-2.12*
Poor appetite	.66	.78	-1.44
Insomnia	.55	.74	-2.22*
Difficulties breathing	.27	.56	-3.53**
Nightmares (war-related/non-related)	.89	.94	-.94
Nightmares involving men	.59	.78	-2.23*
Nightmares involving women	.31	.24	.84
<i>Other indicators</i>			
Number of divorces	.39	.54	-1.34
Infant mortality (number of deaths)	.93	1.06	-.86

\**p* < .05; \*\**p* < .01.

**Table 7**

Percentage of afflicted individuals who reported visiting the following sources of assistance and contingency coefficient values.

	Possession trance	<i>Ku tekemuka</i>	C value ( <i>p</i> -level)
Traditional healer	87.3	84.3	.042
Christian church	56.9	66.7	.098
Community court	16.7	11.4	.073
Police	4.9	.0	.141 <sup>†</sup>
Hospital	18.3	14.7	.048

<sup>†</sup>*p* < .10.

## Discussion

The general prevalence rate of harmful spirit possession was surprisingly high in the studied communities. Yet when the prevalence rate was limited only to those individuals who had experienced multiple simultaneous spirit possessions (i.e., members of the verging group) the rate dropped substantially. Although we cannot confirm whether these rates constitute an increase or decrease over time, because no epidemiological studies had previously been conducted in this region, our results do demonstrate that exposure to mass political violence aggravates the severity of harmful spirit possession. The aetiology of suffering in the studied communities is dominated by *gamba* spirits, which emerged in the historical circumstances of the Mozambican civil war. *Gamba* bears witness to the terrors of modern warfare and demonstrates the seemingly unending experiences of serious afflictions. *Gamba* is believed to have emerged with such great significance in terms of being very performative and harmful that it became the main source of diagnosis.

Our analysis of the predictors of the types of spirit possession (possession trance and *ku tekemuka*) and comparison with the reference group (non-possessed individuals) provides evidence that a diagnosis of harmful spirit possession is a major cause of serious health impairments in this population. In both spirit possession groups the significant predictors included female gender, infant natality, and symptoms such as stomach and rib pain, poor appetite, difficulties breathing, headaches, war-related nightmares, war-related nightmares specifically involving sexual violence, and non-war-related nightmares. In the psychotrauma literature, these latter three symptoms are interpreted as forms of intrusive re-experiencing following war and sexual assault (Herman, 1992), although in the context of the present study, the aetiology of chronic headaches and the nightmares with sexual violence is attributed to the malevolent incursions of *gamba* spirits (Igreja & Dias-Lambranca, 2006). This type of interpretation of nightmares is similar to the phenomenon of spirits raping women survivors of warfare during sleep in Guatemala (Zur, 1998). Regarding the war-related nightmares, which are also called “posttraumatic nightmares” (Schreuder, Igreja, van Dijk, & Kleijn, 2001), participants identified them as related to their wartime experiences. With the exception of nightmares with sexual violence, our results are consistent with ethnographic descriptions that have established correlates among spirit possession, somatic symptoms and an incapacity for rearing young babies resulting in related morbidity (Boddy, 1989; Marlin, 2001; Sharp, 1994; Spring, 1978).

In terms of the features of the possession experience, the possession trance group was more likely to be possessed by two or more spirits, whereas among members of the *ku tekemuka* group, the absence of the voice of the spirit left individuals without a clear sense of the type and number of possessing spirits. Further comparisons between these two groups showed a tendency in the

possession trance group towards higher scores on war traumatic experiences, a higher degree of spirit intrusions, nightmares with sexual assault and infant mortality. These results provide additional evidence for strong links between a higher level of wartime exposure and the recurring and disturbing intrusions of harmful spirits.

The analysis of the gender differences among affected individuals revealed the existence of a disproportionate cumulative burden among women. This burden derived largely from the intrusions of harmful spirits, which caused severe re-experiencing of traumatic events through war-related nightmares, which included nightmares involving sexual assaults. The overall impact of these factors is a debilitated capacity to establish stable relationships with men, care for the self and others, and a vicious circle of morbidity in which babies are born and die sequentially. Although ethnographic reports have indicated the existence of repeated sequences of births and deaths of babies among women with possession trance (Boddy, 1989; Spring, 1978), this study provides supplementary evidence of the interconnections between war violence, harmful spirit possession and debilitating physical and psychological health. This link between war violence and the severity of spirit possession became even more tangible when we analysed the features of the verging group. We found that an increase in the number of harmful spirits was associated with an increase in the severity of individuals' complaints, including a disturbed menstrual cycle, stomach and rib pain and problems breathing. The verging group also reported a higher prevalence of headaches, insomnia, war-related nightmares and war-related nightmares specifically involving sexual violence assaults – symptoms that are consistent with the diagnosis of PTSD among the inhabitants of the region (Igreja et al., 2009, 2006). The intrusive embodiment of multiple harmful spirits was said locally to trigger dangerous illnesses, which causes extra complications for the diagnosis because there is a need to engage with all the spirits. This need raises the financial costs of the treatment, which often patients may not be able to afford. This non-affordability may negatively impact the effectiveness of healing interventions. Under these circumstances, the burden of illnesses caused by harmful spirit possession cannot be considered a marginal issue in postwar Mozambique; it is a serious problem with public health implications.

Other studies conducted in the same region as the one in which our study was conducted suggest that during healing sessions for harmful spirit possession, when the spirit only does *ku tekemuka* it is an indication of the complexity of the possession experience, and of the severity of the past traumatic experience (Igreja et al., 2006). However, these perceptions of causality are not confirmed by our epidemiological data because individuals belonging to the possession trance group demonstrate a trend towards higher scores of war traumatic experiences. Additionally we found that the spirits were a cause of suffering for both the *ku tekemuka* and possession trance group; a similar result was found in both groups in terms of the intrusive character of the spirits ("it comes out by itself").

The majority of *gamba* spirits in our study region were reported to speak the local languages. These spirits choose a specific host, often the relative of an alleged wartime perpetrator, because s/he is vulnerable as a result of past personal experiences of traumatization (Igreja et al., 2008). *Gamba* spirits refuse to speak via a medium healer; instead they choose to wreak havoc in the bodies of their hosts as a way of compelling the host's patrikin to publicly engage in serious conversations, mediated by the *gamba* healer, about the alleged abuses and crimes of the civil war. Hence individuals afflicted by spirits complain about the continuity in experiences of suffering despite the war already being over (Igreja et al., 2006); they experience the incursions of the spirits as a continuation of violence and injustices being perpetrated against them. It is this

dimension of the host's perceived injustice, coupled in some cases with the refusal of patrikin to cooperate to solve these wartime legacies, which leads the host to seek the assistance of the community courts or the police. The plaintiffs expect the judges or the police to compel their patrikin to participate in the healing rituals to alleviate the burden caused by harmful spirit possession.

As part of the healing process, under the control of *gamba* healers, the spirit demands reparation as a precondition to be discharged from the body of the host (Igreja et al., 2008, 2006). This means that the voice of the spirit and the support of the family are crucial in order to relieve the host from the suffering caused by the spirit(s), although it cannot be predicted in advance whether the family will effectively support the victim. Therefore, as compared to the possession trance group, the *ku tekemuka* group reported more frequently that the spirit shakes their bodies when they are in healing sessions and they keep going to watch healing sessions in the community expecting that the spirit will eventually take full control of their bodies and narrate the aetiology of the problem.

Although in terms of health-seeking behaviour our results showed that afflicted individuals searched first for the services of traditional and Christian religious healers, the correlations of spirit possession with different illnesses also suggests the need for a variety of health care practices in the professional biomedical sector in Mozambique. All care practices should consist of the recognition of the burden on the individual affected by harmful spirit possession and the elaboration of an integrated health care policy, which allows for a referral system between traditional and biomedical practices of care at a primary health care level (de Jong, 2002). This referral system is likely to reduce the gap that exists between "explanatory models" of illnesses between patients and healers (Kleinman, 1980) and contribute to the efficacy of health interventions applied by various health care providers in a medically pluralistic society as the one of Mozambique.

It should be part of the scrutinizing routine in primary health care to elicit the patients' perceptions of the cumulative effects of harmful spirit possession in a given disease episode. Furthermore, health care professionals have to carefully examine cases of serious reproductive illnesses and infant mortality beyond the physical symptoms. They should also pay more systematic attention to the general feelings of discomfort that some patients present but may avoid narrating because of fear that their complaints will not be taken seriously. This kind of health care response would increase the levels of empathy during medical encounters, render more transparent the health-seeking behaviour of patients and facilitate the openness and frankness of patients to communicate what they perceive is really happening during given illness episodes. Beyond curative practices, there is a need for political and pedagogical actions to broaden the study curriculum of health courses to include topics related to war violence and the burden of harmful spirit possession and its ill-health correlates, multiple languages of distress and practices of care as part of specific ecological realities (Igreja, 2004).

#### Comparisons of prevalence rates of dissociative experiences

Based on a general understanding of dissociation as entailing the intrusive replacement of the personal identity by a new identity and post-possession amnesia (DSM-IV-TR, APA, 2000), which is accompanied by experiences of serious distress and suffering, we cautiously compare the prevalence rates of our study with those of other epidemiological studies. Our comparisons can be made depending on the type of prevalence rate used: the general prevalence rate, which was 18.6 percent, or (i.e., the prevalence rate for individuals possessed by more than one spirit 5.6 percent). Depending on which of the two is used, the prevalence rates in our

study appear slightly higher or lower as compared to other studies. Epidemiological studies conducted among Puerto Rican communities found rates of approximately 14% of the population suffering from a dissociative experience known as *ataque de nervios* (Guarnaccia et al., 1993). Another epidemiological study in Puerto Rican communities on pathological dissociation among youth (11–17 years) found a prevalence rate of 4.94% (Martinez-Taboas et al., 2006). In some communities in Canada the prevalence rates varied from around 5–10.8% in the general population (Ross, 1991). Using our general prevalence rate (18.6 percent), the explanation for this higher rate is related to the traumas of the Mozambican civil war. This result is consistent with studies indicating stronger correlates between experiences of trauma and the prevalence of dissociative experiences (van der Hart, Nijenhuis, & Steele, 2005). In relation to gender, our study is consistent with the Puerto Rican study (Guarnaccia et al., 1993) that found women to have significantly more dissociative experiences than men. In the Puerto Rican study of youth (Martinez-Taboas et al., 2006) and a Canadian study (Ross, 1991) no gender differences were observed.

## Conclusion

Our study has shown that there is a great toll involved in harmful spirit possession in the centre of Mozambique. The level of suffering suggests that afflicting spirit possession cannot be ignored by policy-makers responsible for developing public health policy. Public health policy should encompass sensitivity in primary health care to spirit possession related health problems in Mozambique. Further research is needed to compare rates of harmful spirit possession over time, its severity as measured by exposure to war violence and the presence of multiple spirits and correlate symptoms in postconflict countries. Future epidemiological studies of harmful spirit possession will help to establish the potentialities and limits of this kind of studies.

## References

- American Psychiatric Association. (2000). *DSM-IV-TR*. Washington, DC: American Psychiatric Association.
- Boddy, J. (1989). *Wombs and alien spirits*. Wisconsin: The University of Wisconsin Press.
- Bourguignon, E. (1973). *Religion, altered states of consciousness and social change*. Columbus: Ohio State University Press.
- De Jong, J. (2002). *Trauma, war, and violence: Public mental health in socio-cultural context*. New York: Kluwer Academic.
- Guarnaccia, P., Canino, G., Rubio-Stipec, M., & Bravo, M. (1993). The Prevalence of ataques de nervios in the Puerto Rico disaster study: the role of culture in psychiatric epidemiology. *The Journal of Nervous and Mental Disease*, 181, 157–165.
- van der Hart, O., Nijenhuis, E., & Steele, K. (2005). Dissociation: an insufficiently recognized major feature of complex posttraumatic stress disorder. *Journal of Traumatic Stress*, 18, 413–423.
- Herman, J. (1992). *Trauma and recovery*. USA: Basic Books.
- Honwana, A. (2003). Undying past: spirit possession and memory of war in southern Mozambique. In B. Meyer, & P. Pels (Eds.), *Magic and modernity* (pp. 60–80). Stanford, California: Stanford University Press.
- Igreja, V. (2003). Exploring the role of *gamba* spirits and healers in the postwar recovery period in Gorongosa. *Transcultural Psychiatry*, 40, 459–487.
- Igreja, V. (2004). Mental health in a postwar society. In P. Morrall, & M. Hazelton (Eds.), *Mental health: Global policies and human rights* (pp. 166–182). London: WHURR Publishers.
- Igreja, V. (2010). Traditional courts and the struggle against state impunity for civil wartime offences in Mozambique. *Journal of African Law*, 54, 51–73.
- Igreja, V., & Dias-Lambranca, B. (2006). The social world of dreams and nightmares in a post-conflict setting. *Intervention*, 4, 145–157.
- Igreja, V., Dias-Lambranca, B., & Richters, A. (2008). *Gamba* spirits, gender relations and healing in post-civil war Gorongosa. *Journal of the Royal Anthropological Institute N. S.*, 14, 350–367.
- Igreja, V., Kleijn, W., Dias-Lambranca, B., Hershey, D., Calero, C., & Richters, A. (2009). Agricultural cycle and the prevalence of posttraumatic stress disorder. *Journal of Traumatic Stress*, 22, 172–179.
- Igreja, V., Kleijn, W., & Richters, A. (2006). Women's posttraumatic suffering after the war in Mozambique. *Journal of Nervous and Mental Disease*, 194, 502–509.
- Kleinman, A. (1980). *Patients and healers in the context of culture*. Berkeley: University of California Press.
- Kwon, H. (2008). *Ghosts of war in Vietnam*. Cambridge: Cambridge University Press.
- Lambek, M. (1981). *Human spirits*. Cambridge: Cambridge University Press.
- Marlin, R. (2001). *Possessing the past: Legacies of violence and reproductive illness in central Mozambique*. Ph.D. thesis, New Jersey: New Brunswick.
- Martinez-Taboas, A., Canino, G., Wang, M., Garcia, P., & Bravo, M. (2006). Prevalence and victimization correlates of pathological dissociation in a community sample of youths. *Journal of Traumatic Stress*, 19, 439–448.
- Masquelier, A. (2001). *Prayer has spoiled everything: Possession, power, and identity in an Islamic town of Niger*. Durham: Duke University Press.
- Mollica, R., Caspi-Yavin, Y., Lavelle, J., Tor, S., Yang, T., Chan, S., et al. (1996). *Harvard trauma questionnaire (HTQ): Manual Cambodian, Laotian, and Vietnamese versions*. Boston, MA: Harvard School of Public Health.
- Perera, S. (2001). Spirit possessions and avenging ghosts. In V. Das, A. Kleinman, M. Lock, M. Ramphele, & P. Reynolds (Eds.), *Remaking a world: Violence, social suffering and recovery* (pp. 157–200). Berkeley: University of California Press.
- Reis, R. (2000). The 'wounded healer' as ideology: the work of ngoma in Swaziland. In R. van Dijk, R. Reis, & M. Spierenburg (Eds.), *The quest for fruition through ngoma: Political aspects of healing in Southern Africa*. Oxford: James Curry.
- Rosenthal, J. (2002). Trance against the state. In C. Greenhouse, E. Mertz, & K. Warren (Eds.), *Ethnography in unstable places* (pp. 316–351). Durham/London: Duke University Press.
- Ross, C. (1991). Epidemiology of multiple personality disorder and dissociation. *Psychiatric Clinics of North America*, 14, 503–517.
- Schreuder, B., Igreja, V., van Dijk, J., & Kleijn, W. (2001). Intrusive re-experiencing of chronic strife or war. *Advances in Psychiatric Treatment*, 7, 102–108.
- Sharp, L. (1994). Exorcists, psychiatrists, and the problems of possession in north-west Madagascar. *Social Science & Medicine*, 38, 525–542.
- Spring, A. (1978). Epidemiology of spirit possession among the Luvale of Zambia. In J. Hoch-Smith, & A. Spring (Eds.), *Women in ritual and symbolic roles* (pp. 165–190). New York: Plenum Press.
- Zur, J. (1998). *Violent memories: Mayan war widows in Guatemala*. Colorado: Westview Press.