Traditional Practices and Exposure to Bodily Fluids in Lusaka, Zambia

Janet M. Wojcicki
University of California - San Francisco, wojcicki@gmail.com

Chipepo Kankasa
University of Zambia

Charles Mitchell
University of Miami, charles.mitchell@miami.edu

Charles Wood
University of Nebraska at Lincoln, cwood1@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/bioscivirology

Part of the Virology Commons

http://digitalcommons.unl.edu/bioscivirology/3

This Article is brought to you for free and open access by the Papers in the Biological Sciences at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Papers in Virology by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Traditional Practices and Exposure to Bodily Fluids in Lusaka, Zambia

Janet M. Wojcicki¹, Chipepo Kankasa², Charles Mitchell³ and Charles Wood⁴

¹ Department of Pediatrics, University of California, San Francisco, CA, USA (wojcicki@gmail.com)
² Department of Pediatrics, University Teaching Hospital, University of Zambia, Lusaka, Zambia
³ Department of Pediatrics, University of Miami, Miami, FL, USA
⁴ Department of Virology, University of Nebraska, Lincoln, NE, USA (cwood1@unl.edu)

Summary

Objectives To ascertain if there are specific sociocultural and behavioral practices associated with the exposure to saliva, semen and vaginal fluids, particularly through child-rearing practices and the use of traditional medicine in Lusaka, Zambia.

Methods We conducted 11 focus group discussions with men and women from diverse ethnic and socioeconomic backgrounds (n = 105) in Lusaka, Zambia in March 2004. We also conducted a brief sociodemographic survey of all focus group participants.

Results Discussions indicated that saliva was used while engaging in home health care practices associated with childcare and the use of traditional medicine. Additionally, semen and vaginal fluids may be used in rituals associated with childcare and health care for children. Our survey indicated that the use of traditional medicine is associated with lower socioeconomic status.

Conclusions Population-based studies are needed to evaluate the relationship between traditional behavioral and sociocultural practices, which involve exchange of saliva and other bodily fluids and risk of infectious disease.

Keywords: HHV-8/KSHV, saliva, Kaposi’s sarcoma, sub-Saharan Africa.

Background

Traditional medical and behavioral practices in sub-Saharan Africa have been evaluated infrequently in relation to risk of infectious disease transmission. Those studies that have been conducted have focused primarily on infection with human immunodeficiency virus (HIV) (Peters et al. 2004; Myer et al. 2005; Mills et al. 2006). In particular, traditional behavioral and medical practices associated blood exposures have been described (Chipfakacha 1997; Peters et al. 2004). Given the widespread use of traditional medicine among sub-Saharan Africans, with some estimates approaching 70% of African populations (Mills et al. 2006), it is important to evaluate the relationship between infectious disease risk and traditional medicine use. Certain behavioral and cultural practices that involve the exchange of bodily fluids are specific to sub-Saharan African peoples and have not been evaluated in relation to infectious disease transmission. In addition to blood, traditional medical and behavioral practices should be evaluated for the exchange of saliva, semen and vaginal fluid exposures.

Saliva has been associated with the transmission of herpes viruses such as Epstein Barr virus, human herpes virus 8 [HHV-8, also known as Kaposi’s sarcoma (KS) associated herpes virus] and human herpes virus 6 (HHV-6) in sub-Saharan Africa (Tolfvenstam et al. 2000; Martro et al. 2004). HHV-8 is understood to be the necessary agent in the development of KS (Chang et al. 1994). KS was endemic in sub-Saharan Africa prior to the emergence of HIV/AIDS comprising 10% of all cancer in Central and Eastern Africa in the years before HIV/AIDS (Oettle 1962; Davies et al. 1964; Hutt & Burkitt 1965; Slavin et al. 1969; Taylor et al. 1972). Risk for KS increased dramatically with the advent of HIV/AIDS in the early 1980s. It has become one of the most commonly diagnosed cancers in the countries of sub-Saharan Africa (Mayama et al. 1998; Sitas et al. 1999). For example, in Harare, Zimbabwe in 1998, KS accounted for 31.1% of registered cancers, including 10.3% of all cancers recorded in children (Chokunonga et al. 2000). Among African men in Zimbabwe, the relative frequency of KS was even higher accounting for 41.1% of...
all cancers in 1998 (Chokunonga et al. 2000). In sub-Saharan Africa the prevalence of HHV-8 is estimated to be between 30% and 60% (Mayama et al. 1998; Olsen et al. 1998; Sitas et al. 1999) with research suggesting that most transmission occurs horizontally (Gessain et al. 1999).

Similar to other herpes viruses, the precise routes of HHV-8 transmission have not been determined. However, recent sub-Saharan African studies suggest that horizontal, vertical and heterosexual transmission are all possible routes (Mayama et al. 1998; Sitas et al. 1999; Plancoulaine et al. 2000; Laverys et al. 2003). Studies in Africa and among men who have sex with men in the United States and Europe have focused on the role of saliva in HHV-8 transmission (Casper et al. 2004; Dedicoat et al. 2004). We have previously published a review of the sociocultural and behavioral practices associated with saliva exchange among sub-Saharan African peoples using ethnographic source material (Wojcicki 2003). In this follow-up short report, we extend our previously published work by providing the results of focus group discussions on saliva exposures conducted in Lusaka in 2004. In contrast with our earlier work, which was based on previously published reports of traditional practices (some dating back to the 1950s), in this report we present focus group discussion data from 2004. In addition, given the possibility of HHV-8 infection through exposure to semen and vaginal fluids as well as the important role of semen and vaginal fluids for HIV infection and the transmission of other infectious disease, we also present the information on semen and vaginal fluid exposures in traditional medical use (Taylor et al. 2004; Montgomery et al. 2006).

**Methods**

In March of 2004, we conducted 11 focus groups during a 1-week period at the University Teaching Hospital (UTH), Lusaka. Focus groups participants were recruited from local churches, among the nurses and nursing assistants working at the hospital, among the cleaners and janitorial staff of the hospital, from a local traditional healing organization and from a women’s health clinic. Focus group recruitment used convenience sampling methods in urban areas and the groups were not recruited to be representative of the population in Lusaka. The size of focus groups ranged from 7 to 11 participants (mean 9.5) and focus groups lasted for approximately 2 hours. Focus groups were led by JW and local nurses who helped translate questions into Nyanja, Nsenga, Bemba and other local languages. Participants were served tea and biscuits during the discussions. Focus groups were designed to help develop a questionnaire to evaluate risk factors for transmission of HHV-8, focusing on exposures to saliva but also on semen and vaginal fluid exposures. Specifically, we asked about child-rearing practices, rituals associated with birth and initiation, eating practices, health seeking behaviors including the use of traditional healers and other aspects of lifestyle. Participants were also asked to fill out a 15-item questionnaire on sociodemographics (age, marital status and ethnicity) and socioeconomic (access in the home or community to water, electricity and flush toilet). Other public health studies in Lusaka, Zambia have also used access to electricity, type of toilet facility used and water source as markers of socioeconomic status (SES) (Chatterji et al. 2005). These indicators have also been used as markers of SES in other parts of sub-Saharan Africa (Hargreaves 2002).

Survey data were analysed using stata 7.0 with the chi-square test of independence and Fisher’s exact statistical test. Focus groups discussions were analysed using QSR* Nudist version 4.0, a software package used for qualitative data content analysis, which helped group the discussions into different themes (QSR 1997). These focus group discussions were part of a larger longitudinal study of Zambian families residing in Lusaka designed to assess risk factors for infection with HHV-8. Approval for this study was obtained from the Institutional Review Board at the University of Zambia and the University of Nebraska, Lincoln.

**Results**

We conducted focus groups with 105 participants [65.7% (69/105) female, 32.4% (34/105) male] of mean age 40.5 (median 39.5), 65.0% (63/97) married and having on average four children [91.4% have at minimum one child (95/104)]. Zambia is one of the poorest countries in sub-Saharan Africa (Human Development Index ranking of 164 in 177 countries in 2002). Participants had on average 9.8 years of education (median 9.0). 37.5% (39/104) used an outside tap and 21.2% (22/104) used a tap in the community. About 25.5% (26/102) did not have access to electricity in their homes, 81.2% (82/101) did not have a landline telephone and 46.6% (48/103) did not have a flush toilet. Only 17.1% (18/105) of our sample indicated that they visit traditional healers for the health care for their children. We found a strong association between the use of traditional healers and many of the measures of low SES (absence of electricity, $X^2 = 8.1, P = 0.001$; use of outdoor water tap or tap in the community, $X^2 = 17.1, P < 0.0001$; absence of a flush toilet in the house, $X^2 = 11.8, P = 0.001$; Table 1).

Our analysis of the discussions in the focus groups found that certain sociocultural practices routinely involve the use of saliva. These themes repeatedly resurfaced in our focus group discussions. Other more infre-
Use of traditional health for child health care in Lusaka, Zambia in relation to demographic and socioeconomic indicators

<table>
<thead>
<tr>
<th></th>
<th>Use TH*</th>
<th>Do not use TH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>n (%)</td>
<td>TH* n (%)</td>
</tr>
<tr>
<td>Male</td>
<td>25 (73.5)</td>
<td>9 (26.5)</td>
</tr>
<tr>
<td>Female</td>
<td>60 (87.0)</td>
<td>9 (13.0)</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>1 (25.0)</td>
<td>2 (75.0)</td>
</tr>
<tr>
<td>5-8</td>
<td>19 (67.9)</td>
<td>9 (32.1)</td>
</tr>
<tr>
<td>9-12</td>
<td>49 (49.2)</td>
<td>8 (5.8)</td>
</tr>
<tr>
<td>&gt;12</td>
<td>12 (85.7)</td>
<td>2 (14.3)</td>
</tr>
<tr>
<td>Flush toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52 (94.6)</td>
<td>3 (5.5)</td>
</tr>
<tr>
<td>No</td>
<td>33 (68.8)</td>
<td>15 (31.3)</td>
</tr>
<tr>
<td>Electricity (in house)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>68 (89.5)</td>
<td>8 (10.5)</td>
</tr>
<tr>
<td>No</td>
<td>17 (65.4)</td>
<td>9 (34.6)</td>
</tr>
<tr>
<td>Telephone (landline)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In house</td>
<td>16 (84.2)</td>
<td>3 (15.8)</td>
</tr>
<tr>
<td>None</td>
<td>67 (81.7)</td>
<td>15 (18.3)</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tap in house</td>
<td>41 (95.4)</td>
<td>2 (4.7)</td>
</tr>
<tr>
<td>Tap outside</td>
<td>33 (84.6)</td>
<td>6 (15.4)</td>
</tr>
<tr>
<td>Tap in community</td>
<td>12 (54.6)</td>
<td>10 (45.5)</td>
</tr>
</tbody>
</table>

*Traditional healer

Use of saliva

The focus group discussions indicated saliva is used in a number of different contexts, confirming our previous review of the literature (Wojicki 2003) including use by traditional healers and during childcare. Our participants discussed how traditional healers use animal horns to suck worms (chidayo) from the patient by placing a horn directly on the patient’s skin or may use their mouths directly on limb if the patient complains of pain (skin may be intact or broken). Healers commonly spit on the face of a child who is having convulsions. Traditional healers often prescribe herbs that need to be pre-masticated before being given to a child to swallow. A common practice throughout sub-Saharan Africa (Nequaye et al. 1991; Shai-Mahoko 1996) was confirmed in this group of participants: use of scarification as a form of healing; dry powders or other substances are applied to the skin after tattooing using saliva or other liquids. Children and infants can get tattoos for a variety of ailments and dried herbs, mixed with saliva or other liquids will be placed on these cuts.

Another common practice involving the use of saliva among mothers and other caregivers was the sucking of mucus out of a child’s blocked nose. Focus group participants indicated that mothers may use saliva to moisten the blocked noses of their children before sucking out the mucus; alternatively, breast milk could be used to soften dried mucus. Mothers also were found to use saliva (sometimes mixed with vaseline) on cracked and sore nipples prior to breast-feeding their children and to treat the pain and itching of children’s insect bites. Lastly, mothers and other caregivers were said to sometimes pre-masticate infant foods or cool foods in their mouths prior to feeding infants.

Use of semen and vaginal fluids

The focus groups also revealed some uses of semen and vaginal fluids as part of child-rearing practices that have previously been unreported in the HIV/AIDS literature. For example, focus group participants describe a post-partum practice common among the Tumbuka of Eastern Zambia and Malawi. After a Tumbuku woman gives birth, she and her husband sleep in separate beds until she is no longer bleeding. When the couple resumes sexual relations, the man releases semen on the baby or on the mother’s hands who then smears it on the baby’s body. Children are usually approximately 3-4 months old when this ritual is performed. This is supposed to strengthen the health of the child and has been confirmed by other researchers working with the Tumbuka in Zambia and Malawi (Zulu 2001). Zulu discusses this as the ‘child-strengthening ritual’ and quotes a man from one of the focus group discussions that he led in Malawi stating, ‘What happens is that they have sex while the wife is holding the child and he has to ejaculate on the child. If the man fails to ejaculate, the child can get sick’ (Zulu 2001). Among the focus groups that we conducted in March of 2004, one of the participants stated that, ‘the hospitals in Lusaka are now full with sick infants whose parents did not follow this traditional ritual and now were suffering (the infants).’ It was also disclosed that if a baby had a fontanelle problem – the mother would be advised to put some vaginal fluids on the baby’s fontanelle or rub it (the fontanelle) with the father’s penis. This practice has not been reported in any of the public health or social science literature on African traditional practices.

The use of vaginal fluids and semen in rituals and home health care is concerning in light of the practice of tattooing (or scarification) in young children for a variety of ailments. Although most participants acknowledged that with the advent of HIV/AIDS, razor blades are not shared, the practice of tattooing continues, albeit with clean, sterilized razor blades. However, if children are being treated for the above described ailments with semen or vaginal fluids after tattooing or scarifi-
Discussion

There recently has been much interest in trying to better understand horizontal risk factors for HHV-8 infection in sub-Saharan Africa. Although it is understood that HHV-8 is more commonly found in saliva and in greater quantities (Pauk et al. 2000) than other bodily fluids, specific risk factors associated with exposure to saliva have not been delineated (Hladik et al. 2003; Mbulai-teye et al. 2004). Our previous work in South Africa and Zambia suggests that low SES individuals are at greater risk for infection with HHV-8 indicating that there may be certain practices or exposures in the low SES environment that increase risk (Wojcicki et al. 2004; Klaskala et al. 2005). Our focus group discussions suggest that there are certain child-rearing practices and health care behaviors (including the use of traditional medicine) that may increase risk for exposure to saliva such as using saliva to treat insect bites and in breast-feeding and the use of saliva in traditional medicine practice. Future research needs to evaluate the relationship between these practices and risk for HHV-8 infection through prospective cohort studies. Our survey results indicate that markers of low SES (absence of electricity, flush toilet and tap water in the home) are all associated with the use of traditional healers and medicine for child health care. It is possible that exchange of saliva through traditional medical use is one of the intermediate steps between low SES and increased risk of infection with HHV-8. Some of the practices described above may not always involve exposure of saliva to mucous membranes or broke skin. In these cases, there is less of a concern about infectious disease transmission.

In general, in sub-Saharan African societies, traditional medicine is widely used to treat a number of ailments from HIV/AIDS (Mills et al. 2005) to infant teething problems (Accorsi et al. 2002). Some studies have found a correlation between traditional practices and educational level (Bukar et al. 2004), while others have demonstrated that education is not a significant predictor for use of traditional medicine (Stekenlenburg et al. 2005). Other studies have emphasized the relationship between low SES or rural location and more frequent use of traditional medicine (Dzator & Asafu-Adjaie 2004; Mkize & Uys 2004).

The focus groups similarly indicated that there are certain child-rearing practices that may expose young children to semen and/or vaginal fluids. Although the frequency of these practices among Southern and Central African populations has not been determined nor has the risk for HIV associated with these practices been evaluated, it is important for researchers, public health workers and medical practitioners to be cognizant that these practices do occur and may potentially put children at risk. In particular, as tattooing or scarification is a common traditional medical treatment, the simultaneous occurrence of tattooing and exposure to semen or vaginal fluids may put children at risk for HIV infection.

References


Pratiques traditionnelles et exposition aux fluides corporels à Lusaka en Zambie

Objectifs Vérifier si des pratiques spécifiques socioculturelles et comportementales sont associées avec l’exposition à la salive, au sperme et aux sécrétions vaginales, particulièrement dans les pratiques pour l’élevage des enfants et dans la médecine traditionnelle à Lusaka en Zambie.

Méthodes Nous avons mené 11 séances de discussion de groupe focalisée avec des hommes et des femmes de diverses sources ethniques et socioéconomiques (n = 105) à Lusaka en Zambie en mars 2004. Nous avons aussi mené une brève enquête sociodémographique sur tous les participants des groupes de discussion focalisée.

Résultats La salive est utilisée dans les pratiques à domicile pour des soins de médecine traditionnelle. Le sperme et les sécrétions vaginales peuvent aussi être utilisés dans les pratiques rituelles pour les soins et la santé des enfants. L’usage de la médecine traditionnelle est associé à un statut socioéconomique plus faible.

Conclusions Des études de population sont nécessaires pour évaluer la relation entre les comportements traditionnels et les pratiques socioculturelles impliquant des échanges de salive et autres fluides corporels avec le risque de maladies infectieuses.

Mots clés HHV-8/KSHV, salive, sarcome de Kaposi, Afrique Subsaharienne

Prácticas tradicionales y exposición a fluidos corporales en Lusaka, Zambia

Objetivos Determinar si ciertas prácticas socioculturales y conductuales, y en particular aquellas relacionadas con la crianza de niños y el uso de la medicina tradicional, están asociadas con la exposición a saliva, semen y fluidos vaginales, en Lusaka, Zambia.

Métodos Se organizaron 11 grupos de discusión focalizada con hombres y mujeres (n = 105) de procedencia étnica y socioeconómica diversas en Lusaka, Zambia, en Marzo del 2004. Se realizó además una pequeña encuesta sociodemográfica a todos los que participaron en los grupos de discusión.

Resultados La saliva se utiliza en las prácticas de atención sanitaria a niños en el hogar, así como en la medicina tradicional. Los fluidos vaginales y el semen también pueden utilizarse en el cuidado del niño, así como en rituales relacionados con la salud infantil. El uso de la medicina tradicional está asociado a un nivel socioeconómico más bajo.

Conclusiones Se requieren estudios basados en la población para evaluar la relación entre el comportamiento tradicional y las prácticas socioculturales que involucran intercambio de saliva y otros fluidos corporales, así como el riesgo de enfermedades infecciosas.

Palabras clave HHV-8/KSHV, Saliva, Sarcoma de Kaposi, África sub-Saharana.