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HIV/AIDS and Croatian Migrant Workers

Abstract

Due to their geographical mobility and long periods of separation from intimate partners, migrant workers are at increased risk for a variety of sexually transmitted infections (STIs) including HIV/AIDS. This study sought to investigate patterns in HIV/AIDS related knowledge, attitudes and sexual behaviour in migrant workers in Croatia. In 2003, 566 male migrant workers were recruited during regular required medical examinations and surveyed at seven locations throughout the country. Each participant was asked to complete a self-administered KABP (sexual knowledge, attitudes, beliefs and practices) questionnaire. The average age of respondents was 38.2 years and the majority worked as seafarers (77.3%) and construction workers (20.5%). Only 18.5% of respondents were able to correctly answer all 13 questions assessing knowledge of HIV/AIDS. Seafarers reported higher levels of knowledge than did construction workers. The average respondent reported having had two sexual partners in the last 12 months, with slightly over half of the respondents (55.3%) reporting condom use at their last intercourse with a casual partner. One fifth of the respondents (20.3%) who reported having had intercourse with a sex worker during the last year reported not using condoms at last intercourse. The number of sexual partners was correlated with age, marital status, faith in God, and personal HIV risk assessment. Attitudes toward condom use, co-workers' HIV/AIDS concerns and the duration of migrant status (within the last two years) were shown to be significant correlates of condom use at last intercourse with a casual partner. The effect of HIV/AIDS related knowledge on analyzed behaviors did not reach statistical significance. Inadequate patterns of migrant workers' condom use, gaps in knowledge about HIV transmission and modes of protection, as well as widespread ignorance regarding available anonymous HIV testing found by this study suggest a critical need for expert intervention to avert the potential for an increase in new HIV/AIDS cases. A coordinated, systematic campaign for HIV/AIDS prevention among Croatian migrant workers should focus on

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increasing peer communication about HIV/AIDS, especially among younger migrant workers, and on reducing the frequency of sexual risk taking.

KEY WORDS: Migrant workers, seafarers, construction workers, HIV/AIDS, knowledge, attitudes, sexual behavior, Croatia

RUNNING HEAD: HIV/AIDS and Croatian Migrant Workers

Introduction

Developing trends in HIV transmission and Acquired Immunodeficiency Syndrome (AIDS) indicate that the incidence of new cases of in many parts of Eastern Europe and the former Soviet Union is among the highest in the world.[1] Recent studies suggest that migration patterns may significantly affect transmission rates, especially in vulnerable populations.[2] Migrant workers (MW) appear to be one such vulnerable group, particularly in countries that currently have low incidence rates and where the perceived risk of acquiring the infection is low.

The country of Croatia is currently characterized by both low prevalence (0.01-0.02%) and incidence rates of HIV/AIDS relative to other parts of Eastern Europe. In 2001 there were 330 registered HIV-positive individuals living with AIDS in Croatia, compared to 303 in 2000. However, during a three-year period from 2000 to 2003, 37 new cases were reported in contrast to only 22 new cases reported during a ten-year period in the nineties, suggesting that transmission rates are on the rise.[3] In addition, the majority of cases are men with heterosexual transfer (39.2%), with homosexual transfer accounting for the second largest group (33.7%).

Given a relatively long history of low incidence and prevalence rates overall, the HIV/AIDS epidemic has received relatively little attention in the Croatian media and has generally been seen as a low priority in public health discussions. However, recent increases in incidence rates, albeit small, would suggest that the possibility for a rapid expansion of the number of cases exists, especially given documented trends in neighboring countries.[4-6] If such an expansion were to occur, the need for a high profile campaign of education programs as well as increased testing and treatment facilities will rapidly become critical. This may prove especially challenging in a post-socialist democracy given Croatia's limited financial resources and a public health care system in

need of revitalization. In addition, an absence of data on sex workers and migrant workers who account for the majority of cases[4], as well as infrequent HIV testing, particularly outside of major urban areas, and growth in the population of intravenous drugs users, a group typically characterized by a variety of risky behaviors (e.g. needle sharing, unprotected sexual relationships, etc.), are important issues that will need to be addressed to meet this challenge successfully.[6,5]

Regardless of their sexual habits in their original environment, MWs are at increased risk for a variety of sexually transmitted infections (STI), including HIV/AIDS, due to their geographical mobility and long periods of separation from their sexual partners. Croatian epidemiological data confirms this, with an estimated 90% or more of infections resulting from heterosexual activities engaged in abroad. The population of seamen MWs accounts for more than a half (55%) of all cases.[3] This population may be especially vulnerable given that Croatian MW's exist in a cultural milieu where the risk of HIV infection is not widely recognized.

Vulnerability of Migrant Workers

Separated from domestic social structures, norms, values, language and social support, MWs are more likely to engage in risky behaviors. Risks are embedded in the transient nature of migrant worker's lives; the longer the time spent away from home, the higher the probability of engaging in high-risk sexual contacts[7] Other factors, such as characteristics of lifestyle and working environment related to specific professions, may increase the odds of infection.

A good example of the increased vulnerability is the work and living conditions of seafarers, who confined to the same working and living shipboard space for long periods of time, suffer constant exposure to hazardous environmental conditions. Merchant seafaring has for a long been identified as a particularly hazardous occupation with morbidity and mortality higher than in most occupations ashore.[8,9] Their suicide rate is higher than in other occupational groups.[9-14]. Travel to many parts of the world also increases exposure to infectious agents, rarely encountered in their native countries. In addition, physical factors such as noise, temperature extremes, macro vibration, toxic cargo, work aboard ship under severe weather conditions, the risks of mechanical

malfunctions, and finally piracy and violence all contribute to seafarers' vulnerability.[15,16] Loneliness, isolation, lack of privacy and interpersonal stress are the factors that, in combination with an absence of normal domestic routines and the strict social hierarchy associated with life aboard a ship, can cause extreme psychological stress.[17]

Numerous reports have focused on the rates of SDI's among seafarers.[18, 19] Shortly after HIV was recognized as the cause of AIDS, it was pointed out that seafarers could be particularly vulnerable to HIV infection.[20-24] Long periods of separation from intimate partners are common for migrant workers and results in an increased frequency of potentially risky paid sex. Although important structural changes and modernization have re-shaped the maritime trade, drastically shortening the time spent in ports[12], available data do not suggest a reduction in HIV infection incidence among seafarers.[25-29] Sex industry in many ports has adapted to the mentioned changes by transporting sex workers to anchored ships, often in collaboration with the port authorities.

According to various estimates there could be as many as 40,000 Croatian MWs including seafarers, construction workers and truck drivers. Several important differences between these groups are worth noting. First, construction workers and truck drivers, because of the nature of their work, have increased opportunities for social and sexual contacts although their contacts are less culturally diverse then of seafarers. Secondly, the level of professional stress in these groups is low in comparison to seafarers, which may influence the frequency of risky behaviors. Third, while Croatian seafarers work primarily for international companies, construction workers and truck drivers are more likely to be employed by local, domestic companies. This is a crucial difference in terms of the availability of HIV/AIDS related information. Unlike the case of modern seafaring, where efforts have been made to raise awareness regarding HIV/AIDS, primarily through informational brochures and medical manuals that are compulsory by international regulations on every ship[30, 31], concern about STI and HIV/AIDS within national construction and trucking companies is marginal at best.

Individual lifestyle factors and personality characteristics may also figure prominently as predictors of sexual risk taking as demonstrated in a number of HIV/AIDS studies. It is plausible to speculate that some men are drawn to migratory occupations because of an expectation of certain psychological pay-offs such as sexual

opportunities etc. In such cases, the overall level of risk taking would be determined by both occupational and individual characteristics.[32, 33]

The following study was part of a project entitled *Research and Capacity Building on HIV/AIDS and Croatian Migrant Workers* and was supported by the Global Fund to fight AIDS, Tuberculosis and Malaria program coordinated by the Croatian Ministry of Health. It examined the patterns of risky sexual behaviors, HIV/AIDS related knowledge and relevant attitudes among different groups of MWs. The goal of the study was to identify factors contributing to HIV-risks in this population in order to provide an empirically sound basis for intervention programs. Previous studies carried out on Croatian seafarers did not provide such insights.[34, 35]

Methods

Sample Selection and Data Collection

Participants were solicited from three groups of MWs: seamen, construction workers and transportation drivers. In order to capture a pool of MW participants, health care-workers at 25 clinics and institutions that perform mandated employment physicals throughout Croatia were contacted. These physicals are required for licensing in a variety of professions in Croatia. Each participant was asked to voluntarily fill out a self-report questionnaire during a routine mandated medical exam.

Health care workers at each participating facility were given instruction in data gathering procedures, either through face-to-face contacts, or in writing by the project coordinator. Issues regarding privacy were given particular emphasis to guarantee confidentiality of the responses. In order to insure total anonymity each institution was given a receptacle in which respondents could deposit their response forms without having to hand their questionnaire to staff. Given the large number of facilities participating in the project, health care workers were specifically instructed not to give assistance in the form of interpretation of questions, even if specifically asked to do so as to insure uniform data gathering procedures to the degree that it was possible.

Questionnaire and Instruments

A questionnaire was constructed in order to quantitatively measure of HIV/AIDS knowledge, relevant attitudes and patterns of sexual behavior of three groups of migrant workers. Standardized questions on HIV/AIDS related knowledge and indicators of sexual risk taking were taken from previous IOM sponsored studies on HIV/AIDS related behaviors in MW's. The questionnaire consisted of a total of 80 variables (42 questions) divided in several sections. The first section contained questions about a number of socio-demographic variables and time spent working abroad. The second part of the questionnaire included questions measuring levels of HIV/AIDS related knowledge. These questions were divided into two groups: (a) questions measuring knowledge of the modes of HIV transmission, and (b) questions measuring knowledge of the modes of protection. The third part of the questionnaire measured perceptions of personal risk of HIV/AIDS infection, the respondent's evaluation of attitudes of friends and co-workers towards HIV/AIDS, attitudes about individuals living with HIV/AIDS, and attitudes about condom use. The final part of the questionnaire requested information about sexual behavior patterns, alcohol and other drug use during sexual activities, and questions about changes in sexual behaviors due to perceived risks about STIs and HIV/AIDS. Questions about sexual orientation, HIV/AIDS testing, the availability of HIV/AIDS information, sexual harassment and experience of STI were also included in the questionnaire. The questionnaire was pre-tested at the beginning of December 2003 on a small number of workers, in order to verify readability and comprehension. Total time to complete the questionnaire was 10-20 minutes.

HIV/AIDS related knowledge was measured by two composite variables: (a) an index of the knowledge of the modes of transmission and (b) an index of knowledge of the modes of protection. The indices were expressed as summed scores of seven and six items, respectively. Participants could respond to questions by circling either "yes", "no" or "don't know". The questions regarding the modes of transmission asked whether HIV/AIDS could be transmitted by re-using intravenous drug shooting equipment or shaving blades, by mosquito bites, by using public toilets, by having sex without using condom, from a pregnant HIV positive woman to her baby, by hugging someone who has AIDS, and by drinking from the same cup or glass with somebody who has AIDS. The six questions about the modes of protection asked whether it is possible to protect oneself

from HIV/AIDS by getting vaccinated against AIDS, by using condoms, by not re-using shooting equipment or shaving blades, by abstaining from sex, and by having sex only with people who look clean and healthy. Both indices had moderate reliability (0.69 and 0.52 respectively).

A number of other questions were used, either singly or in aggregate, to assess attitudes about related items of interest. Attitudes toward condom use were assessed by aggregating responses to four questions measuring the acceptance of negative beliefs about condoms ("A woman will lose a man's respect if she asks him to use condom"; "Using a condom is a sign of distrusting a partner"; "Only homosexuals and sex workers use condoms"; "Condoms diminish sexual pleasure"). Respondents were asked to use a 5-item scale ranging from "completely disagree" to "agree completely" when answering these questions. The larger the value of the composite indicator, the more negative attitude. The index of attitudes toward condom use had moderate reliability (alpha = 0.68). Sexual risk taking was assessed through the following two indicators: (a) the number of sexual partners in the last twelve months and (b) condom use at last intercourse with a casual partner. Due to its skewed distribution, the variable assessing the number of partners was dichotomized so that 0 denoted only one sexual partner and 1 two or more sexual partners. Respondents' concerns about HIV/AIDS were measured by the following question: "Are you afraid of becoming infected with HIV/AIDS?" Respondents use a 4-item scale, ranging from "very much so" to "not at all", for recording answers. Respondent's assessment of co-workers HIV/AIDS concerns was measured by the following question: "Would you say that the people you work with are concerned about HIV/AIDS?" Response options were "yes", "no", and "I don't know". The variable was dichotomized so that 0 denoted that respondent's co-workers are concerned and 1 that they are unconcerned or that respondent could not tell. Religious beliefs were measured on a 4-item scale assessing the importance of God in respondent's life. The scale ranged from "highly important" to "unimportant". Formal education was expressed in the number of years spent in educational institutions.

Data Collection

Data collection took place over a five-month period from December 2003 through mid-May of 2004. Completed questionnaires were collected from clinics in seven out of the ten cities contacted for participation in the study (Zagreb, Rijeka, Zadar, Split, Dubrovnik, Čakovec and Slavonski Brod). In total, 570 questionnaires were collected, accounting for approximately 1.5% of the estimated international seaman population (30,000), and approximately 2.4% of the construction worker population. Sampling of the transportation driver's population was less successful with only seven truckers completing questionnaire. This appears to be due to a legal loophole regarding whether these workers are required to have annual medical examinations or not. Less than 1% of the questionnaires were incorrectly filled out, and while more than 25% contained missing data they were not excluded from the data analysis, except for those few in which less than 70% of the questions were answered. However, female respondents were excluded from the analysis due to a small number (4).

Despite clear procedures for recording the rate of participation, none of the local coordinators supplied actual data regarding refusal rates. When contacted by phone regarding participation rates, we were able to attain general assurances that "almost no one" refused to participate in the study.

Statistical Analyses

Data were analyzed by using a standard statistical software package (SPSS 11.5). Bivariate relationships were examined by chi-square test and oneway ANOVA procedure. Logistic regression models were created to predict condom use at last intercourse with a casual partner, number of sexual partners in the preceding year and HIV related behavioral change. Only p levels < 0.05 were considered statistically significant.

Results

Basic demographic data, number of years in MW status and length of time working abroad are shown in Table 1. The average age in our sample was 38.2. The majority of respondents were seafarers, more than two thirds of which were marine officers. Most

respondents reported having secondary education One third of the sample, almost exclusively maritime officers, reported having a college education.

[INSERT TABLE 1 ABOUT HERE]

The majority of participants were married, moderately religious, and had some knowledge of foreign languages. On average, the men surveyed spent from eight (construction workers) to almost fourteen years (maritime officers) in MW status. During the preceding two years, they spent at least 38% of time working and living abroad. Again, the group of marine officers that was characterized by the longest average time spent in MW status during the last 24 months.

Table 2 presents data on the respondents' sexual behavior and its possible consequences.

[INSERT TABLE 2 ABOUT HERE]

Although most respondents had a single sexual partner in the 12 months preceding the study, a substantial minority reported multiple partners. Sailors were significantly overrepresented among MW with more than one partner. This appears to be related to the fact that they are also the youngest of the three groups and the least likely to be married. No significant differences were found among the three groups of MW regarding the last sexual partner; the respondent's wife or girlfriend in the majority of cases. However, 10-17% of respondents indicated that the last person they had sex with was a casual partner. Less than 2% of respondents reported that their last sexual episode was with a sex worker.

The survey questionnaire included several questions on condom use on different occasions. Approximately 30% (29.6) of respondents indicated reported not using a condom during intercourse with a casual partner. Among the surveyed MW who had paid for sex at least once, a majority (51.7%) did report condom use during their last commercial sex encounter. However, one fifth of respondents (20.3%) failed to do so. The least educated group of MW, construction workers, were significantly less likely to

have used a condom during their last commercial sex encounter. Although the majority of respondents reported that they never had anal sex, most of those who did have anal sex reported not using a condom the last time they had anal sex. There were no significant differences between groups regarding anal sex condom use. A minority of respondents (14 out of 547) reported that they engaged in same-sex sexual activities in the preceding year.

About 6-12% of respondents reported having had a sexually transmitted infection (STI) at least once, with marine officers being overrepresented among this group. As expected, we found an association between the length of the MW status and the experience of STI ($rho=0.16$; $p<0.01$). Half of the marine officers and almost as many sailors (47%) had been tested for HIV antibodies. The fact that they were significantly more likely to have been tested than construction workers should be attributed to the fact that many maritime companies require a HIV test from potential employees. This was confirmed by the finding that more than three quarters of surveyed seafarers reported having been tested because it was required.

Analysis of responses to items measuring HIV/AIDS related knowledge suggest a slight difference between levels of knowledge regarding the modes of HIV transmission and knowledge of modes of protection from HIV infection. Only 34% of respondents provided correct answers to all seven questions on HIV transmission, while 37.9% correctly answered all six questions regarding HIV protection. The analysis clearly points to gaps in the HIV/AIDS related knowledge among Croatian MW, mostly due to misconceptions and myths about HIV transmission (infection through use of public toilets, mosquito bites and sharing glass with an infected person), and beliefs that healthy looking partners can not be infected, or that abstinence is ineffective protection from HIV/AIDS.

Looking for differences in the levels of HIV/AIDS knowledge within the MW sample, we carried out additional analyses using composite measures of knowledge about HIV transmission and HIV protection (Table 3). The findings point to moderately high levels of knowledge, which are not equally distributed within the sample. In both cases, seafarers were found to have more information than construction workers, which probably reflect their higher formal education. In addition, when asked about the

availability of HIV/AIDS information materials in the working environment, it was found that construction companies provide such materials less often than do maritime companies. In the case of knowledge of the modes of HIV protection, levels in marine officers exceeded that of both sailors and construction workers. No significant differences in HIV/AIDS related knowledge were found between different age cohorts.

[INSERT TABLE 3 ABOUT HERE]

Overall, attitudes toward condom use were favorable and the majority of respondents rejected common myths and prejudices regarding their use. An important exception from these generally favorable attitudes was found in responses to a question regarding practical aspects of condom use. When asked whether they agreed that condoms interfere with sexual pleasure, the largest number of MW responded "yes" (49%). No significant differences in responses were found among the three groups of MW or among different age cohorts.

Next, we analyzed the possible association between formal education, HIV/AIDS related knowledge and attitudes toward condom use. As expected, the three dimensions were found to be significantly related, with correlations ranging from low to moderate. Respondent's level of education was associated with both measures of knowledge ($r=0.21$, $p<0.001$ and $r=0.29$, $p<0.001$), but not with attitudes toward condom use ($p<0.52$). Scales of the modes of HIV transmission and the modes of HIV protection were inter-correlated ($r=0.55$, $p<0.001$), and both were found to be significantly associated with attitudes toward condom use ($r=--0.15$, $p<0.01$ and $r=--0.23$, $p<0.001$, respectively).

Multivariate logistic regression models predicting number of sexual partners in the preceding years and condom use at last intercourse with casual partner are shown in the next two tables. In the first case (Table 4), we found that age, being married or in stable relationship, faith in God and personal concerns about getting infected with HIV significantly reduce the odds of having two or more sexual partners in the preceding year. Respondents who are older, religious, married or in a stable relationship, and concerned about HIV risks are less likely to have had multiple partners. The effect of HIV/AIDS related knowledge did not reach statistical significance in the multivariate model.

[INSERT TABLE 4 ABOUT HERE]

In addition to the variables entered in the regression analysis presented above, the model predicting condom use at last intercourse with a casual partner included having multiple sexual partners (two or more). Only three variables proved to be significant predictors: amount of time spent working abroad (during the last two years), co-workers' concern about HIV/AIDS risks, and attitudes toward condom use (Table 5). According to these findings, respondents who spent more time working and living away from home, those who perceive their co-workers as concerned about HIV/AIDS risks and those who have more positive attitudes toward condom use were significantly more likely to have used condoms during their last casual sexual encounter. Interestingly, 20.3% of our respondents reported that they never had sex outside of marriage or a committed relationship.

[INSERT TABLE 5 ABOUT HERE]

It should be noted that our regression models explained only a fraction of variance in independent variables, pointing to an important role of unaccounted factors.

Discussion

According to the findings, a sizable proportion of those MW surveyed had engaged in sexual risk taking. Only slightly over a half of respondents (55%) used a condom during their last intercourse with casual partner; 30% did not use it and 15% claimed not to remember whether they have used it or not. A fifth of respondents who used sex workers' services had unprotected sex on the last such occasion. Furthermore, condoms were infrequently used during anal sex with any partner. Although it is impossible to establish the magnitude of HIV/AIDS transmission risk in our sample, as we lack the necessary information about type of sexual acts, nationality and other characteristics of sex workers and casual partners, sexual risk taking seems to be a part of MW experience for both Croatian seafarers and construction workers.

When considering the findings of the present study as a whole, several points related to its possible limitations bear mentioning. Our sample selection was specifically targeted at groups known to account for the majority of cases of HIV/AIDS in Croatia and these findings apply exclusively to those particular subgroups of MW: merchant marines and construction workers. Thus, the generalizability of these results to other groups of MW (e.g. truck drivers, women) is limited. The factors that influence sexual choices at both an individual and socio-cultural level for these groups are likely to be quite different and may include situations and behaviors that make them especially vulnerable to the risk of HIV/AIDS.[2]

While every effort was made to insure privacy and confidentiality during data collection, some participants may have had concerns about responding to questions asking for sensitive information in an employment related environment. Formal data regarding refusal rates was not collected and it may be that some at risk individuals chose not to participate and selected themselves out of the sample. Even those individuals who did participate may have withheld information or responded in a more positive way than would be typical due to the demand characteristics of the questionnaire. Social desirability in responding is known to influence responses in both non-vulnerable[36] and vulnerable populations.[37] In addition, questionnaires were self-administered and could have been impacted on by individual variables such as educational level and time constraints. Indeed, some questionnaires were incomplete and it is unclear to what extent the missing data may have influenced the results. In spite of these limitations, the size of the sample was sufficiently large and varied to provide a reasonable picture of HIV/AIDS knowledge, attitudes and related behaviors in a group known to be at risk.

Although we lack more detailed insight into MWs' sexual activities (especially regarding dyadic or relationship aspects), the data collected does suggest different patterns of sexual behavior among groups of Croatian MW. Sailors reported the highest number of sexual partners and marine officers appeared to use condoms more often than other respondents, particularly construction workers. In addition to these behavioral differences, construction workers were found to be significantly less well informed about HIV/AIDS and less likely to have been tested for HIV then the other two groups of MW. This difference in knowledge seems to be caused by a combination of individual and

structural factors. On one hand, construction workers were the least educated group of the three ($p<0.001$) and both indices of HIV/AIDS knowledge were found to be significantly associated with years of formal education ($p<0.001$). On the other hand, HIV/AIDS information is more often provided by maritime than construction companies. While over 70% of surveyed seafarers claimed that HIV/AIDS informational brochures are present in their working environment, the same was reported by less than half (41%) of construction workers.

Interestingly, no differences were found in attitudes and beliefs regarding condom use suggesting a widespread normalization of condom use in Croatia, which was also observed also in a recent study of adolescent sexuality.[38] In the year preceding the study, the Croatian bishops' conference issued a public statement condemning condom use as ineffective in protecting users against STI. Although our instrument did not measure religious beliefs regarding condom use, the beliefs and attitudes we did measure proved unrelated to the importance of faith, as well as to formal education and age.

In contrast to an earlier, albeit smaller, research study on Croatian seafarers[34], we found that marine officers were more likely to have contracted STI than sailors and construction workers. This unexpected finding can not be fully explained by our data. One possibility is that officers were simply more honest about their STI experience. Also, being better educated, it is possible they were more ready to seek medical help when experiencing symptoms of STI, which would result in their under-representation among respondents with undiagnosed STI. Assuming that our finding is unaffected by the limitations suggested above, the cause of higher prevalence of STI among marine officers could be related to the length of time spent working and living away from home. On average, marine officers spent a statistically significant greater time in MW status than the rest of participants (see Table 1). If STI risks are highly correlated to the duration of MW status, then the findings that marine officers were more likely to use condoms than sailors and construction workers could be, at least partly, the consequence of their STI experience.

Regression analyses offered a more detailed insight into factors mediating HIV/AIDS risks. Some of them are individual, such as age, religiousness and the experience of STI, others relational (the impact of being married or in a stable

relationship) or socio-cultural (time spent working abroad, peer concerns). As extensively elaborated in contemporary social science research on HIV/AIDS, sexual risk taking is a complex phenomenon that includes personal (rational and irrational motivation), interpersonal and socio-cultural determinants, and is rarely consistent over time.[39, 40] Simply put, personal risk management is a process highly sensitive to experience, social interaction and the dominant – or, sometimes, *subcultural* - social construction of HIV/AIDS risks. Still, intervention approaches to Croatian MWs' sexual risk taking is at this point primarily focused on the individual, aiming at increasing knowledge, changing beliefs and behaviors, and needs to be informed by relevant research findings. In that respect, our study emphasizes the importance of: (a) focusing on the young and unattached MW, and (b) influencing personal and peer concerns regarding HIV/AIDS. In addition to specific educational programs, the latter may also be achieved by designing discussion provoking HIV/AIDS materials available in MWs' working environments. Peer concerns shared in off-duty discussions were found to have a preventive impact, and if provided with appropriate background materials, could serve as informal basic sex education.

How risky is observed sexual behavior of Croatian MW? As already mentioned, the population of seafarers accounts for more than a half of all HIV/AIDS cases in Croatia. According to our analyses, the majority of our participants reported having casual sex, but only slightly over a half of them used condoms at last such occasion. In addition, every fifth migrant worker who had ever paid for sex did not use a condom the last time they bought sex. Clearly, the initial question cannot be answered solely within individual approach to HIV/AIDS risks, which is focused on personal knowledge, attitudes, beliefs and behaviors. This rather limited perspective, overly relying on rational choice paradigm[41], should be expanded by a more context-sensitive approach.[39, 40, 42]

Is there a distinct MW sexual culture in Croatia? The notion of sexual culture usually refers to a system of sexual symbols, values, knowledge, beliefs, expectations and practices that characterize certain social groups or communities.[43-46] Some authors point out that MW's indeed develop a "migrant identity"[46] and even a "culture of migrancy", often blending indigenous and foreign sexual macro scripts that can "lead to a denial of certain (sexual) behaviors".[47] Since MW "commute" between two or more cultures, it

seems plausible that they would develop a hybrid sexual culture, an amalgam of home and host sexual cultures. Behaviorally, this could mean that they either compartmentalize their sexual behavior (exhibiting one pattern at home and another when abroad) or adopt a new standard of behavior that reflects their migrant experience. When home and host communities differ greatly in the level of social control and sexual permissiveness, such non-compartmentalized behavior could be very costly.

Returning to the question regarding a sexual culture of Croatian MW, it should be noted that no ethnographic data on Croatian construction workers is currently available. They have less formal education than seafarers ($p<0.001$) and come from different regions and social backgrounds, but are mostly raised in smaller (often rural or semi-rural) communities. In contrast, seafarers are a more homogenous population. Traditionally, seafarers were recruited almost exclusively among men from the coastal areas of Croatia, which is still largely the case. From the 1970s on, the coastal areas have experienced a rapid tourist development, which has changed the local, restrictive Catholic sexual culture by promoting sexual permissiveness – particularly among young men. Coastal communities in Croatia still maintain sexual a double standard, imposing rather strong social control over young women, but not young men. As reported in the first Croatian HIV/AIDS study, young men from coastal areas exhibit the highest level of sexual risk taking[49], particularly during the summer season. In that sense, seafarers are socialized sexually in a rather permissive environment, but one that is at the same time characterized by gender inequality and a strong moral influence of the Church, especially in marital matters. This could pose some problems for intervention programs, especially those that focus on MWs' wives.

An important feature of the dominant sexual culture in Croatia is its systematic ignorance of HIV/AIDS risks. Due to the fact that Croatia is a low-prevalence country at present, there is little or no public awareness of differential, profession-related HIV/AIDS risks. This and the fact that HIV/AIDS situation in other countries, including the neighboring ones, is never addressed in the "inward-looking" Croatian mass media, makes local MW especially vulnerable. Our findings suggest a learning process by which MW develop a concept of differential risk of casual sex with local and foreign partners. Unlike the number of sexual partners, length of working and living abroad proved to be a

significant predictor of condom use at last casual sex encounter. Individual sexual risks, to which MW are exposed, become collective when they return to their local communities. Especially in the case of young and unmarried seafarers whose often conspicuously lavish lifestyle attracts a high degree of peer attention. The fact that many seafarers return to their local communities as well-off individuals significantly affects their social status and desirability. This may have been of particular importance during the 1990s, when the social costs of post-communist transition and the 1991-1995 resulted in a sharp increase in unemployment, poverty and social inequality, as well as in an overall rise of uncertainty and insecurity. Unfortunately, this potentially important dimension remains outside of the scope of this paper. Our survey did not assess possible impact of the post-communist transition. What we know, in general, is that several aspects of gender and sexual relations were subject to socio-cultural change prompted by the transition processes.[50] What remains to be explored is whether (and how) this great political, economic and social transformation impacted sexual behaviors and MW sexual culture(s) in Croatia.

ZNANJE O HIV/AIDS-u, STAVOVI I SEKSUALNO PONAŠANJE HRVATSKIH RADNIKA MIGRANATA

Sažetak na hrvatskom

Kada je riječ o HIV/AIDS-u i drugim spolno prenosivim bolestima, radnici migranti su osobito ranjiva skupina. Geografska mobilnost, duža izbivanja iz lokalne zajednice i odvojenost od partnera čine ih izloženijima seksualnim rizicima nego što je to slučaj s općom populacijom. Ova studija se temelji na istraživanju HIV-relevantnog znanja, stavova i seksualnog ponašanja 566 radnika migranata, prosječne dobi od 38.2 godine. Ispitanici su anketirani prilikom redovitog testiranja u sedam ordinacija medicine rada širom Hrvatske. Podatci su prikupljeni upitnikom koji su ispitanici sami ispunjavali. Većinu ispitanika su činili pomorci (77.3%) i građevinskih radnika (20.5%). Samo je 18.5% anketiranih radnika migranata točno odgovorilo na sva pitanja o HIV/AIDS-u (postavljeno je 7 pitanja o načinima prijenosa i 6 pitanja o načinima zaštite), pri čemu su pomorci iskazali bolje znanje od građevinskih radnika. Kada je riječ o seksualnom ponašanju, ispitanici su u prosjeku imali dvije seksualne partnerice tijekom posljednjih godinu dana. Nešto više od polovine (55.3%) je koristilo kondom pri posljednjem odnosu sa slučajnom partnericom. Jedna petina ispitanika (20.3%) nije rabila kondom pri posljednjem odnosu s osobom koja prodaje seksualne usluge. Broj seksualnih partnerica pokazao se povezan s dobi, bračnim statusom, vjerom u Boga i osobnom procjenom rizika zaraze HIV-om. Stavovi prema uporabi kondoma, zabrinutost suradnika (kolega s posla) zbog HIV/AIDS-a i dužina migrantskog statusa (tijekom posljednja 24 mjeseca) identificirani su kao korelati uporabe kondoma pri posljednjem odnosu sa slučajnom partnericom. Znanje o HIV/AIDS-u nije se pokazalo značajnim prediktorom niti u jednoj od provedenih regresijskih analiza. Nezadovoljavajuća uporaba kondoma pri rizičnim odnosima, nedovoljna razina znanja o HIV/AIDS-u i raširenо nepoznavanje mogućnosti testiranja na HIV upućuju na potrebu intervencije i sustavne prevencije u populaciji radnika migranata. Prema našim nalazima, napore treba usmjeriti na intenziviranje komunikacije o rizicima HIV/AIDS-a u radnoj okolini (utjecaj referentne skupine), osobito među mlađim radnicima migrantima, te smanjivanje učestalosti rizičnih ponašanja.

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Table 1 – Sociodemographic characteristics of the sample

	% (n)
Age	
19-30	31.5% (174)
31-49	49.7% (275)
50 up	18.8% (104)
Education	
Primary school	5.3% (30)
Secondary school	59.7% (336)
University degree	35% (197)
Marital status	
married	56.5% (318)
single	18.5% (104)
steady relationship	21.5% (121)
divorced / separated	3.2% (18)
widow	0.4% (2)
Occupation	
merchant marine officers	53.3% (300)
merchant marines	24% (135)
drivers	1.2% (7)
construction workers	17.9% (101)
civil engineers	2% (11)
others	1.6% (9)
Knowledge of foreign languages	
no	14.4% (80)
yes	85.6% (475)
Faith in God	
very important	44.1% (245)
fairly important	38.7% (215)
little important	9.5% (53)
unimportant	7.6% (42)
Church service attendance	
regular	13% (72)
occasional	67% (373)
never	19.8% (110)
	Mean (SD)
*Numbers of years in the MW status**	
seafarers, officers	14.0 (10.6)
seafarers, sailors	12.3 (11.0)
construction workers	8.3 (9.2)
*Length of time working abroad during the preceding 24 months (in months)**	
seafarers, officers	12.9 (4.9)
seafarers, crew members	11.8 (5.5)
construction workers	9.2 (8.3)

* $p < 0.001$

Table 2 – Sociosexual characteristics of the sample

	Seafarers, officers (n=300)	Seafarers, crew members (n=135)	Construction workers (n=112)
		% (n)	
Number of sexual partners (in the preceding 12 months)**			
1	204 (71.3)	67 (57.8)	73 (70.9)
2	40 (14)	12 (10.3)	16 (15.5)
3-4	27 (9.4)	20 (17.2)	10 (9.7)
5 and more	15 (5.2)	17 (14.7)	4 (3.9)
Sexual partner at last intercourse			
wife	168 (56.6)	63 (49.2)	71 (65.1)
girlfriend	86 (29)	37 (28.9)	25 (22.9)
casual partner	34 (11.4)	22 (17.2)	11 (10.1)
sex worker	5 (1.7)	4 (3.1)	1 (0.9)
other	4 (1.3)	2 (1.6)	1 (0.9)
Condom used at last intercourse with a casual partner*			
yes	148 (50.5)	45 (38.5)	37 (35.2)
no	65 (22.2)	26 (22.2)	33 (31.4)
do not remember	29 (9.9)	20 (17.1)	13 (12.4)
never had casual sex	51 (17.4)	26 (22.2)	22 (21)
Condom used at last intercourse with a sex worker*			
yes	143 (48.8)	52 (43.3)	33 (30.8)
no	23 (7.8)	11 (9.2)	11 (10.3)
never had paid sex	127 (43.3)	57 (47.5)	63 (58.9)
Condom used at last anal sex			
yes	26 (8.8)	17 (13.8)	10 (9.4)
no	85 (28.9)	31 (25.2)	26 (24.5)
never had anal sex	183 (62.2)	75 (61)	70 (66)
Same-sex sexual activities (in the preceding year)			
yes	5 (1.7)	5 (4.2)	4 (3.9)
no	287 (98.3)	113 (95.8)	99 (96.1)
Have tested for HIV***			
yes	146 (50)	66 (52.8)	20 (18.7)
no	146 (50)	59 (47.2)	87 (81.3)
Ever had a STI*			
yes	36 (12.3)	7 (5.8)	6 (5.6)
no	257 (82.7)	113 (94.2)	101 (94.4)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 3 - Differences in HIV/AIDS knowledge according to occupation and age groups

	Knowledge of the modes of transmission	Knowledge of the modes of protection
	Mean (SD)	
Occupation		
Seafarers, officers (A)	5.89 (1.34)	5.17 (1.00)
Seafarers, crew members (B)	5.52 (1.49)	4.70 (1.22)
Construction workers (C)	4.89 (1.78)	4.22 (1.55)
All	5.60 (1.52)	4.87 (1.23)
	$F = 16.9$; $p < 0.001$; $C \neq A, B$	$F = 24.8$; $p < 0.001$; $A \neq B, C$; $B \neq C$
Age groups		
19-30	5.77 (1.38)	4.99 (0.97)
31-49	5.55 (1.57)	4.84 (1.33)
50 up	5.32 (1.73)	4.76 (1.39)
All	5.58 (1.54)	4.87 (1.23)
	n. s.	n. s.

(n.s. = non significant)

Table 4 - Correlates of number of sexual partners in the preceding year

(n = 392)	OR / (p)	95% C.I.
Age	0.95 (.001)	0.92 - 0.97
Education	1.05 (n.s.)	0.64 – 1.74
Married/in stable relationship	0.17 (.001)	0.09 - 0.31
Length of time spent working abroad (during the last 24 months)	1.01 (n.s.)	0.96 – 1.05
Faith in God	1.32 (.05)	1.00 - 1.75
Co-workers' concern about HIV/AIDS	0.61 (n.s.)	0.35 – 1.06
Personal concern about HIV/AIDS	0.59 (.001)	0.45 - 0.76
HIV/AIDS related knowledge	1.02 (n.s.)	0.90 – 1.16

Table 5 - Correlates of condom use at last intercourse with casual partner

(n = 295)	OR / (p)	95% C.I.
Age	0.99 (n.s.)	0.97 – 1.02
Education	1.25 (n.s.)	0.76 – 2.05
Married/in stable relationship	0.95 (n.s.)	0.48 – 1.87
Faith in God	0.80 (n.s.)	0.60 – 1.05
Length of time spent working abroad (during the last 24 months)	1.05 (.05)	1.01 – 1.1
Co-workers' concern about HIV/AIDS	1.74 (.05.)	1.02 – 2.98
Personal concern about HIV/AIDS	1.10 (n.s.)	0.83 – 1.46
HIV/AIDS related knowledge	1.03 (n.s.)	0.90 – 1.17
Attitudes toward condom use	0.55 (.01)	0.38 - 0.79
Multiple sexual partners	1.44 (n.s.)	0.79 – 2.61