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Rebecca Egner 4/20/2011

A Secondary Analysis of Mental Health Disability and Treatment Implications in Recently-resettled Refugees

By

Rebecca Egner

MPH

Global Health

_____

Roger Rochat, M.D.

Committee Chair

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Rebecca Egner

B.S. Health and Exercise Science

Wake Forest University

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Thesis Committee Chair: Roger Rochat, M.D.

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Master of Public Health
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ABSTRACT

Introduction

Refugees are at disproportionately high risk for mental health disability –specifically PTSD, anxiety and depression – due to the extent and scope of the various challenges they encounter as a population fleeing crisis and cultural obstacles in their country of resettlement. Despite the scale of the burden, few studies have examined the specific mental health needs of this vulnerable population. A study profiling the unique demographic and symptomatic characteristics of refugees will provide much needed information for healthcare providers and local organizations committed to attenuating the plight of refugees by tailoring outreach and mental health care appropriately.

Methods

This was a secondary analysis of data collected from DeKalb County health screenings of refugees screened between September 2008 and March 2009. The database included eight demographic variables and 28 mental health symptomatic variables of refugees expressing mental health distress. Analysis was completed in SAS software package version 9.3 from the SAS Institute. Chi-square analyses were used to assess associations between demographic, symptomatic and outcome variables. Analysis of variance assessed differences in mean expression of general mental health disability, PTSD, and depression symptoms across groups of country of origin. Phi correlation coefficients were collected to examine correlations between symptomatic variables.

Results and Implications

Of an initial 1,236 records reviewed, 138 (11.2%) expressed four or more symptoms and/or had a history of torture and were thus abstracted for further analysis. Results indicate a large mental health burden across refugees of various ethnicities, age groups, gender, marital status, and education levels. Refugees express, on average, seven symptoms, with a range from 1 to 25 symptoms, and most commonly expressed symptoms include excessive worry (60.9%), difficulties sleeping (60.6%), and low energy (60.8). The highest correlated symptoms are problems concentrating and staying away from reminders of traumatic events (φ=0.96) while those of depression are feeling worthless and having thoughts of ending one's life (φ=0.70). Health care providers and local organizations are encouraged to support and encourage the development of community-based culturally-appropriate treatment approaches addressing specific mental health symptoms and attenuating resettlement challenges contributing to mental health disability in the refugee community.

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INTRODUCTION

Background and Rationale

Mental health disability continues to persist as a leading cause of disease burden worldwide [1, 2]. Though all persons are at risk for mental health disability, the Movement for Global Mental Health, a recent initiative launched by the WHO enacted primarily to protect the human rights of persons inflicted with mental health disorders, notes the growing crisis in under-served and vulnerable populations [1]. Specifically, refugees involuntarily forced from their home countries seeking safety and freedom in a new environment face the challenge of adapting to a foreign lifestyle, language, and culture [3]. In addition, the frequent need to cope with previous trauma or torture situations with limited resources leaves this population at disproportionately high risk for mental health disability, including depression, anxiety, and PTSD.

Those affected by the mental health burden –often extending beyond the individual– frequently have few options for coping. Due to diagnostic and treatment challenges – including varying perceptions of mental health, stigma associated with mental health disorders in numerous cultures, and limited resources allocated for appropriate treatment measures – a large gap between accurate diagnosing time and receipt of proper care, specifically for the under-served refugee population, continues to exist [2]. The cultural barriers and nebulous nature of mental health disability in varying cross-cultural situations makes treating the refugee population uniquely challenging and thus the need to study the resettling situation extremely pertinent on a local, as well as a global scale. Finally, with few previous studies investigating trauma and symptoms of present primary refugee groups, more research is needed in order to appropriately and adequately address the mental health needs of these populations.

Purpose Statement

The purpose of this analysis is to provide a descriptive and quantitative assessment of the MH burden of current populations of resettling refugees and associated symptomatology unique to various country of origin groups. This information is intended to inform decision makers seeking to better manage and attenuate the mental health burden of recently-settled refugees.

Significance

While Australia, Canada, and the Nordic countries welcome large influxes of refugees annually, the United States remains the top refugee recipient. Since the commencement of its humanitarian efforts, over 2.5 million refugees have been resettled in the US [4]. In 2009, of the nineteen countries that accepted refugees, the US accepted the highest number, 80,000 [5]. On a local scale, DeKalb County continues to welcome over 2,500 refugees annually with limited resources to tackle growing mental health needs [6]. Accurate prevalence estimates and assessment of associated diagnostic and treatment implications are critical to understand the degree of impact and measures needed to address this burden. Furthermore, an understanding of the factors contributing to the refugee mental health disability and of those ethnic populations most encumbered by the growing burden will aid in the development of culturally-appropriate treatment methodologies, helping to ensure a successful transition for refugees to life in the US and other resettling countries.

Definition of Terms

Mental health disability

"the presence of psychological distress; impairment in psychological, social, or occupational functioning; or, any disorder that is associated with an increased risk of suffering death, pain, disability, or loss of freedom" [7]

Anxiety

"a disorder characterized by chronic anxiety, exaggerated worry and tension" [8]

Depression

"a common mood disorder characterized by a combination of symptoms that interfere with a person's ability to work, sleep, study, eat, and enjoy once-pleasurable activities; disabling and prevents a person from functioning normally" [8]

Post Traumatic Stress Disorder (PTSD)

"an anxiety disorder that can develop after exposure to a terrifying event or ordeal in which grave physical harm occurred or was threatened; events triggering PTSD may include violent personal assaults, natural or human-caused disasters, accidents, or military combat" [8]

Refugee

"someone who owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country" [9]

Resettlement

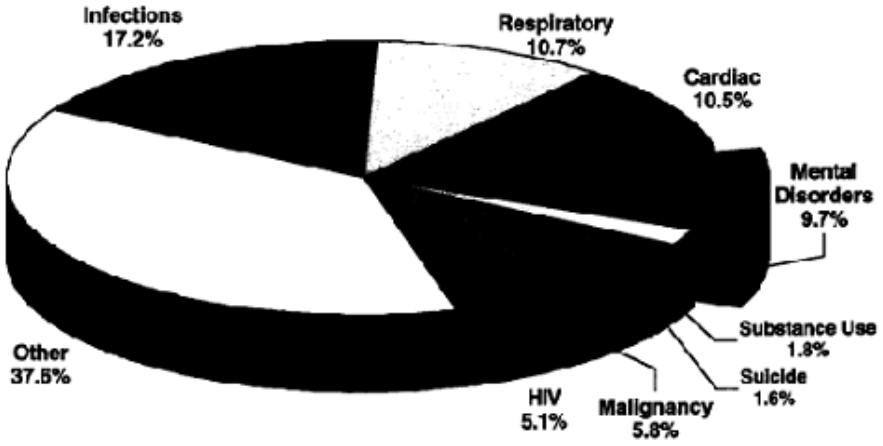
"*Resettlement* involves the selection and transfer of refugees from a State in which they have sought protection to a third State which has agreed to admit them – as refugees - with permanent residence status. The status provided should ensure protection against refoulement and provide a resettled refugee and his/her family or dependants with access to civil, political, economic, social and cultural rights similar to those enjoyed by nationals" [9]

LITERATURE REVIEW

Mental Health in a Global and Local Context

Mental health is an "integral and central component of health," as demonstrated by its inclusion in the World Health Organization's (WHO) official definition of *health*. According to the WHO, *health* is a "state of complete physical, mental, and social well-being and not just the absence of disease" [10]. More specifically, *mental health* is "a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community" [10]. Approximately 450 million people are burdened in some way by a mental health disability, representing between 9.1 and 16.9% of the global population [10, 11]. In fact, the global mental health disability is predicted to be approximately equivalent to that of cardiovascular and respiratory diseases (Figure 1) [12, 13] and is primarily attributable to four major diagnoses: schizophrenia and related non affective psychoses, major depressive disorder, panic disorder, and bipolar affective disorder [14].

Figure 1. DALYs : Global burden of disease [12, 13]



As persons struggling to adapt to an unfamiliar culture and commonly fleeing trauma in their home countries, refugees are at high risk for chronic mental health disability [15, 16]. Moreover, resettlement agencies and refugee communities themselves agree that mental health is a “badly neglected area” signifying a great need for research and necessary resource allocation to address the issue [17]. A comprehensive review of the literature by Kirmayer et al. emphasized the need to understand the unique risks and exposures faced by the target population in each migratory phase – premigration, migration, and post-migration settlement – in order to shed light on an individual’s personal mental health struggle [18]. According to this review, specific post-migration challenges including acculturation and acceptance by the receiving society (which in turn reflects employment and social status), may play larger roles than once thought in determining mental health status [18]. Pre-resettlement risk factors contributing to poor mental health status may include older age, female, coming from higher socioeconomic status, and higher level of education while post- resettlement risk factors include unstable living arrangements, poor economic opportunities, and lack of resolution of the conflict from which they fled [15]. Findings from a study by Schweitzer et al emphasize such factors, identifying pre-migration trauma, family status, and gender as key contributors to mental health status in Sudanese refugees [19]. Figure 2 displays the premigration, migration, and postmigration factors contributing to mental health status in refugees [18].

Figure 2. Premigration, migration, and postmigration actors associated with mental health status of resettled refugees [18]

Premigration	Migration	Postmigration
Adult		
Economic, educational and occupational status in country of origin	Trajectory (route, duration)	Uncertainty about immigration or refugee status
Disruption of social support, roles and network	Exposure to harsh living conditions (e.g., refugee camps)	Unemployment or underemployment
Trauma (type, severity, perceived level of threat, number of episodes)	Exposure to violence	Loss of social status
Political involvement (commitment to a cause)	Disruption of family and community networks	Loss of family and community social supports
	Uncertainty about outcome of migration	Concern about family members left behind and possibility for reunification
		Difficulties in language learning, acculturation and adaptation (e.g., change in sex roles)

A recent review by Fazel et al. covering 6,743 adult refugees from seven countries found a 9% rate of post- traumatic stress disorder (PTSD) (11% in 260 refugee children) and 5% rate of major depression[20]. Further evidence support these findings, pointing to elevated levels of emotional distress, PTSD, anxiety, and depression, as well as psychosomatic disorders and grief-related disorders [19, 21] among refugees.

In addition to the disease burden, the economic burden of mental health disability is wide-ranging and long-lasting, with indirect costs related to “productivity loss” often creating the highest burden in countries with under-established economies [22, 23]. Additional costs result from the dispersed effect on care givers and friends and family, health and social service needs, increased crime and public safety concerns, and premature death. Limited resources and untrained staff only add to the growing economic burden of mental health by accruing “indirect costs due to productivity loss” [22].

Refugees in Georgia- Overview

Refugees flee from a variety of political and religious issues including war, persecution, and genocide; thus, the need for relocation across the globe continues to escalate. Though the

state of Georgia has consistently ranked in the top ten states receiving immigrants in the US, between 2000 and 2009, the foreign-born population (people residing in the United States who were not US citizens at birth) in the state increased by 59.4%, from 577, 273 to 868,413 [24]. The foreign-born population now represents 9.4% of the state's overall population [24].

In 2008, Georgia accepted 2,824 refugees from over 58 countries. 2465 of these refugees, or 87.3%, were resettled in DeKalb County [6]. According to the Department of Community Health of the state of Georgia, of these 2,824 refugees, 771 were Bhutanese, 642 Burmese, and 223 Iraqi, representing 27.3%, 22.7%, and 7.9% of the total settled in DeKalb County, respectively [6].

According to the United Nations High Commissioner for Refugees, these three specific populations – Bhutanese, Burmese, and Iraqi – have been among the largest of those resettled for the past six years and will continue to be so in the upcoming years [5]. All three ethnicities have been forced from their home countries for various reasons. Hundreds of thousands of Bhutanese refugees, almost all ethnic Nepalis from southern Bhutan, have been displaced to refugee camps in Nepal since 1991 as a result of political and religious strife which stripped them of their citizenship and rights [9]. Reports estimate over 14,000 deaths, thousands of disappearances, the displacement of over 150,000 people, and more than 100,000 incidents of torture as a result of the war [25, 26]. A 14% PTSD prevalence has been reported in Bhutanese refugees still living in Nepali [25]; post-resettlement factors (i.e. language and culture challenges) might exacerbate levels.

Burma (also known as Myanmar) has been entrenched in political conflict for several decades, forcing approximately 100,000 to seek safety in refugee camps along the Burma-Thailand border [9]. Structured interviews with Burmese refugees resettled in Australia pointed

to post-migration factors including language barriers and fear for family not in Australia as having the greatest influence on the reported levels of PTSD, anxiety, and depression (9%, 20%, and 36%, respectively) [27].

Increasing military strife and humanitarian needs as a result of the Iraq War have led Iraqis to flee to neighboring countries including Iran, Syria, and Jordan [9]. According to UNHCR figures, casualties between March 2003 and June 2006 were estimated to be as high as 600,000 and as a result of the ongoing conflict over four million Iraqis have been displaced from their homes [28]. In 2009, with 1.8 million having sought refuge in neighboring countries, Iraqis represented the second-largest refugee group [5]. A recent cross-sectional survey found that for Iraqi refugees, fear for family members living in a context of ongoing threat was a primary predictor of PTSD, depression, and overall mental health disability [29].

DeKalb County Refugee Physical and Mental Health Screening Processes

In order to provide appropriate mental health treatment to identified individuals, a comprehensive screening process must be designed. Newly-arrived refugees to the United States receive mandatory physical health screenings, “to ensure the well- being of all newly-arrived refugees” yet there is no mandate for refugee mental health screenings [30]. Additionally, screenings are to be completed within 90 days of a refugee’s arrival to ensure detection of any medical issues to “prevent further exacerbation of the problem and possible spread to the indigenous community” [30]. Mental health screening tools applicable to the unique situations experienced by refugees are few and it remains a struggle to provide adequate mental health screenings to refugees [31]. Consequently, comprehensive treatment plans rarely exist or fail to adequately address refugees’ mental health disabilities.

The DeKalb County BoH recently implemented mental health screenings to accompany refugees' physical health assessments. The mental health screening process was adapted from the Colorado Refugee Service's comprehensive refugee health screening and assessment program developed in 1997 [31]. The Colorado program was designed in response to the recognized shortage of appropriate screening techniques and appropriate follow-up care of such a vulnerable population and includes features such as full interpretation services and education of healthcare providers to screen for and deliver culturally-appropriate care [31]. During a sample quarter of Colorado's first thirty months of implementation, of the 384 refugees screened, the program detected 54 mental health concerns (often related to a history of torture) and appropriately referred for further evaluation, support or therapy [31]. Features of the DeKalb County BoH screening process adapted from Colorado's screening tool include collection of over "20 demographic characteristics, 12 staff-observed symptoms, 15 self-reported mental health symptoms, 16 self-reported PTSD symptoms, and eight physical health items" [32].

Mental Health Symptomatology and Perceptions in Varying Ethnicities

Because of the diversity and cultures from which refugees originate, learning the unique experiences of each sub-group and the common symptomatology for each ethnicity and demographic group would help in developing optimal treatment plans. Jamil et al recruited Iraqi refugees resettled in the US who were being treated for a mental health disability to better understand the symptomatology of this population. Symptoms of anxiety reported by all participants included faintness, dizziness, trembling, and weakness while symptoms of depression expressed included crying easily, low energy level, and sleeping problems [16]. Interestingly, in individual interviews, men were significantly more likely to report trauma

associated with imprisonment and torture even though previous reports revealed that both genders had been substantially affected by imprisonment and torture [16]. Similarly, a study assessing PTSD in Kosovar refugees in the US found that eight specific PTSD symptoms (including flashbacks, irritability, and intrusive memory) were noted in more than half of the respondents. Women had higher PTSD scores according to the PTSD Symptom Scale than did men [33].

With the influx of immigrants in a resettled situation comes the added challenge of providing culturally-appropriate mental health resources to these populations. There is increasing concern regarding the derivation of mental health treatment plans for refugees based on western ideologies and cultures [34]. The authors of Colorado screening process, described above, explained that refugees' responses to a diagnosis are mixed due to varying degrees of understanding and acceptance: some request mental health support, others report symptoms but refuse any type of care, others seek education on the issue and reassurance that their feelings are normal with respect to their recent prior experiences [31]. Diagnosis and treatment experts have varying opinions on diagnosing and treating mental health cross-culturally [35, 36]. Responses of in-depth surveys conducted with international experts on mental health and disaster, for example, included the belief that PTSD does not represent a proper disorder in the case of displaced populations as their reactions are normal for experiencing such extreme consequences and that the disorder is irrelevant to people of non-Western cultures. Indeed, one expert declared, "PTSD is a western notion of some validity when we have some "western' notion of self and agency. Not elsewhere" [35].

Still, greater understanding of cultural beliefs and attitudes has certainly proved hopeful. While exploring coping strategies of 13 resettled Sudanese women, for example, Schweitzer et al

identified three themes with great potential to shape appropriate treatment plans not only for Sudanese refugees but also for groups who are found to share similar values [21]. The themes identified included family and community support, religion, and personal attitudes and beliefs [21]. Similarly, a larger study of the same ethnic group found social support from the migrant's ethnic community as playing the most significant role in determining mental health status [19]. An elucidation of the experiences of Bosnian refugees resettled in the United States revealed belonging (including concepts of cultural memory, identity and difference) and adapting (including a focus coping with past experiences and losses and learning the new language) as two key themes to maintaining mental health and contributing to their new environment [37]. Religion/spirituality has also proved an important notion in both the understanding and treatment of mental health in many migrant populations and warrants vital consideration in the development of treatment plans [38].

Additional Challenges and Treatment Implications

In addition to differences in varying cultural perceptions of mental health, the stigma attached to mental health disability has also proved a primary barrier to administering affective treatment [18, 39, 40]. Such stigma has contributed greatly to the reduced funding and resources committed to mental health research and determination of appropriate diagnostic and treatment procedures [39]. "Stigma often makes community members, institutions, treatment providers, and family members alike view people with a mental health disability with low regard, in turn making it unlikely for the victim to seek appropriate care for fear of greater stigmatization" [39]. One study of a British Asian community found perceived stigma, the "fear of gossip," discrimination by health and educational professionals, and culturally-inappropriate services to

be strong barriers to mental health service use for Asian families [41]. Similarly, interviews of Bhutanese refugees in Nepal demonstrated families' reluctance to seek care due to the stigma attached to revealing self-blaming *karma*, or what they perceived as the "transmission of past sins into personal loss" [25]. A recent review indicates the weakening effect that the dearth of the understandings of trauma in a Nepalese context brings to the development of effective treatment strategies [26].

Various studies agree on the fact that culturally-appropriate and adaptable treatment plans are feasible and effective [4, 34]. Furthermore, the Movement for Global Health has identified primary strategies in overcoming barriers (including the organization of appropriate mental health service packages, training of health- and non-health providers, and integration of mental health care into primary care) in order to provide much needed care to the 60% of those suffering individuals who receive no treatment [42].

A Call to Action [42]

> We call for the global health community, governments, donors, multilateral agencies, and other mental health stakeholders, such as professional bodies and consumer groups, to scale up the coverage of services for mental disorders in all countries…We argue that a basic, evidence-based package of services for core mental disorders should be scaled up, and that protection of the human rights of people with mental disorders and their families should be strengthened [42].

In October of 2008, the Movement for Global Mental Health was launched by a diverse group of leaders dedicated to attenuating the mental health burden, specifically for those where the treatment gaps are the largest and resources few. Particularly, the actions undertaken by the coalition are based on "two fundamental principles: evidence of effective treatments and the human rights of all people with mental disorders" [1]. A recent study conducted by the

Movement looked into effective strategies for reducing the treatment gap in over sixty countries and found emergent themes to include increasing the number of professionals trained to treat such disorders, increasing involvement of important non-trained providers, and active involvement of those actually debilitated in some way by mental health disabilities [2]. The latter mechanism proved extremely relevant in low-resource settings and highly vulnerable populations, including migrant communities [2]. The Movement stresses the comprehension of individuals' manifestations of their symptoms in a cultural context as key to effective treatment strategies. Moreover, the coalition's efforts represent a rejuvenating push for more research and resource allocation for mental health and a call for practitioners and the public alike to advocate for the human right of health by ensuring that all affected by mental health disability receive appropriate care [42].

METHODOLOGY

Introduction

This study is a secondary data analysis of de-identified data abstracted from refugee health screening records from DeKalb County Board of Health. Recognizing that there was no adequate information available on the mental health needs of refugees, Dr. Kathleen Connors of the Georgia Coalition for Refugee Mental Health, in conjunction with Emory University Rollins School of Public Health, designed and conducted a comprehensive needs assessment. Objectives of the assessment were to profile the mental health symptomatology of refugees in order for the Georgia Coalition of Refugee Mental Health to better meet those needs by addressing diagnostic and treatment implications. Dr. Kathleen Connors made available the de-identified data. Approval to analyze the pre-existing database was granted by the Emory Institutional Review Board (Appendix A.).

Data Collection: Study Population and Setting

The initial sample included all refugees resettled in DeKalb County who received a physical and mental health screening between September 1, 2008 and March 1, 2009. This generous timeframe was determined under the assumption that it would provide for a robust statistical analysis. The study population for analysis included all refugees who exhibited at least one of the following: (1) four or more mental health symptoms according to their mental health screening, or (2) any note of trauma or torture in their file or referral to the Center for Torture and Trauma Survivors (CTTS), a community-based initiative providing services and support to torture and trauma survivors. The criterion of four or more mental health symptoms was adapted according to the Diagnostic Statistical Manual of Mental Disorders (DSM-IV) clinical threshold.

Data Collection: Procedures

All record reviewers jointly established a project protocol that outlined each aspect of the health screening record review. The review process (detailed in Appendix B) consisted of three steps:

1. All records dating starting from January 1, 2008 were pulled and scanned for screening dates.

2. Those records with screening dates within the project timeframe (n_{total}=1236, n_{adults}=795) were fully reviewed and placed in one of the following categories according to whether or not they[1] exhibited:

    1. any designation of a potential mental health concern demonstrated by (1) four or more mental health symptom (s) AND/OR (2) note of previous torture or trauma or CTTS referral) (n=138)

    2. 0 mental health symptoms (n=423)

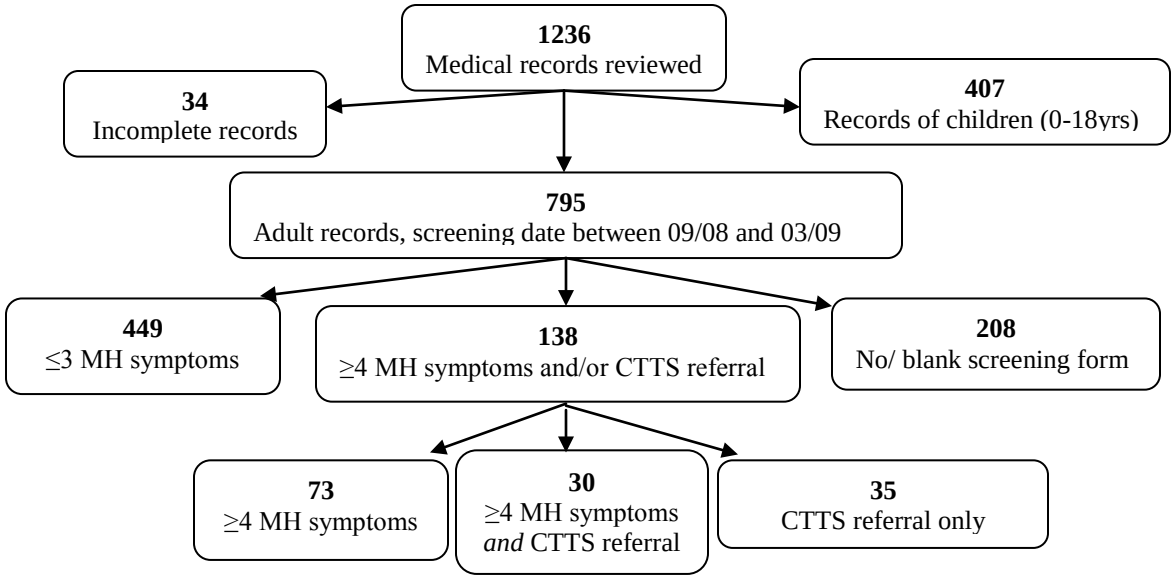
    3. 1 to 3 mental health symptoms (n=26)

    3. no or blank mental health screening form in their medical record file (n=208)

3. Only those medical records falling within the first category above (i.e. those with mental health concern) were abstracted for data analysis.

[1] Refugees under the age of 18 do *not* undergo mental health screening under the DeKalb BOH screening process.

Figure 3. Stages of Record Abstraction



Instruments

Two comprehensive data collection tools were developed for data compilation. The first form was a general tool used to organize information from all records reviewed (Appendix C). A second form was then adapted from the DeKalb BOH screening form and used to compile information from those records abstracted as portraying mental health significance. Items on the BoH screening form transmitted to the abstraction log included "20 demographic characteristics, 12 staff-observed symptoms, 15 self-reported general symptoms, 16 self-reported PTSD symptoms, and eight physical health items" [32] (Appendix D).

Statistical Analysis

A de-identified data set was received and cleaned in Microsoft Office Excel 2007. All data were analyzed using SAS software package version 9.3 from the SAS Institute. Descriptive statistics (including frequency and percentages) were calculated for all demographic factors (country of origin, sex, age, highest level of education, marital status, weeks elapsed between arrival and screening) and tested for association with outcome variables (expression of three

primary symptoms, discussed below) using frequency and univariate analyses. Based on these initial frequencies, succeeding analyses were stratified by country of origin: Burma, Bhutan, Iraq, and Other. Age was divided into four reference categories (18-27 years, 28-37 years, 38-47 years, 48+ years) as was weeks elapsed between arrival and screening (1-7 weeks, 8 weeks, 9 weeks, 10+ weeks) with roughly 25% of the population falling into each quartile Marital status was dichotomized (Married v Non-married). The twenty eight symptomatic variables were also dichotomized: responses of "extremely," "yes," "sometimes," "often," "quite a bit," and "a little" were coded as "Yes" while responses of "rarely," "not at all," and "no" were coded as "No."

An outcome variable was created based on recent findings in the literature identifying difficulties sleeping, excessive worry, and feeling slow or void of energy as three of the most common mental health symptoms expressed by migrant populations. Subjects who expressed these three symptoms were categorized as "cases," and those who did not as "controls." Demographic characteristics were compared across country groups using chi-square analysis. Mantel-Haenszel p-values were collected as measures of association. All demographic variables were cross-tabulated with all symptomatic variables to assess differences of symptom expression across varying demographic groups.

Analysis of variance (ANOVA) was used to compare overall mean number of symptoms, as well as mean number of depression symptoms and mean number of PTSD symptoms expressed overall and across the four groups of country origination. Finally, phi correlation coefficients were used to assess associations between overall, PTSD, and depression symptomatic variables. For all tests of statistical significance, an alpha level of 0.05 ($p<0.05$) was considered significant. Fisher p-values were considered in cells with expected values of less than five.

RESULTS

Demographic Characteristics of Study Population

An initial screening of 1,236 health records dated between September of 2008 and March of 2009 identified 138 (11.2%) resettled refugees exhibiting four or more mental health symptoms and/or had a history of trauma/torture or CTTS referral. The sample included 53 Burmese, 36 Bhutanese, 29 Iraqis, and 20 refugees of various other countries of origin including Afghanistan (3), Algeria (2), Congo (1), Eritrea (2), Ethiopia (2), Iran (1), Somalia (4), Rwanda (2), Senegal (1), Malaysia (1), and Libya (1). Just over half of the subjects were under the age of 38, married, and had children. 21.7% of people had no formal education while 23.2% has at least some high school education. Approximately 35% of refugees screened during this period arrived to the United States within eight weeks of screening; all had been in the United States for less than six months. Demographic characteristics are detailed in Table 1.

Demographics by Country of Origin

Across country groups (Burma, Bhutan, Iraq, and Other), sex, age, marital status, highest education level attained, and whether or not one had children differed significantly ($p<0.05$) (Table 2). Specifically, over 60% of refugees in the Burma, Iraq, and Other groups were males while Bhutan had more females (52.8%). Approximately 60% of refugees in Burma and Other country groups were under the age of 37 while 58.3% of Bhutanese were older than 48 years and 55.2% of Iraqi's were between the ages of 28 and 47 years old. Over half of refugees from Burma, Bhutan, and Iraq were married and had children, while only 25% of refugees from other countries were married, and only 10% with children. Finally, highest education level attained varied drastically. 47% of Bhutanese had no previous education while over half of refugees from

Iraq had attained at least a high school education level. There was no difference in time elapsed between arrivals and screening date between country groups – approximately 25% of each group had been in country for 10 weeks or more at the time of their health screening.

Missing Values

Many symptomatology variables had missing values, accounting for 20 to 29% of values (Table 3). At 29%, problems with intimacy and loss of sexual interest had the highest percentage of missing values. Demographic characteristics associated with missing values are presented in Appendix E.

General Symptomatology

The mean number of symptoms reported overall was 7.5 (SD= 7.0), with a range from 1 to 26 symptoms, while that of PTSD and depression was 3.3 (SD=4.0) and 4.0 (SD=4.0), respectively. No group expressed, on average, more or fewer general, PTSD, or depression symptoms than any other group. Approximately 38% of Burmese refugees expressed no symptoms and 47%, and 43% of Bhutanese and Iraqi refugees, respectively, expressed between six to 10 mental health symptoms (Figure 4). 28% of refugees from other countries expressed 21 or more symptoms.

The most common reported mental health disability was excessive worry, noted by 60.7% (n=67) of all subjects (Table 4). Additionally, difficulty sleeping (60.6%) and low energy (60.8%) were common symptoms among all four subgroups (Figure 5). All symptoms were expressed by at a least one refugee in each group, with the exception of Burmese refugees – no Burmese refugees noted thoughts of ending life, problems with intimacy, or irritable/angered as

symptoms. Among these subjects, the most common mental health symptoms expressed were sleep difficulties (52.3%), low energy (50.0), poor appetite (50.0%), and staying away from reminders of traumatic events (48.8%). Bhutanese subjects most commonly reported low energy (88.9%), poor appetite (79.3%), sleep difficulties (75.9%), and loneliness and excessive worry (62.1% and 60.0%, respectively), while Iraqis noted excessive worry (82.6%), sadness (69.6%), loneliness (61.9%), sleep difficulties (47.8%), and reminder of event brings back feelings (43.5%) as priority symptoms. In refugees from other countries, excessive worry (84.6%), sadness (84.6%), sleep difficulties (76.9%), low energy (76.9%), and loneliness (76.9%) were most commonly reported. Overall, 47.1% (n=65) of subjects were referred to CTTS. Of those reporting no symptoms (n=38, had history of torture or trauma), 52% were Burmese and 16% was represented by each of the other three groups.

Demographics and Symptomatology

The frequency of all anxiety symptoms with the exception of trouble concentrating and all depression symptoms with the exception of loneliness differed significantly among country of origin groups (Table 5). Crying easily differed significantly between sexes (p=0.01), with 51.3% of females expressing this symptom and only 25.4% of males (Table 6). Within age groups, excessive worry was significantly more prevalent among 37 to 48 year olds than the youngest group of 18 to 27 year olds (p=0.02). 28 to 37 year olds expressed loss of sexual interest significantly more than both the youngest and oldest age group (48 years and older) (p=0.04) (Table 7). The only difference in expression of symptoms between married and unmarried refugees was that unmarried refugees expressed more worry and nervousness than married (p=0.04) (Table 8). Finally, 81.3% of refugees with a middle school education expressed

excessive worry, significantly more than those with an elementary (41.7%) or high school (36.8%) education (p=0.02). Loss of sexual interest was expressed significantly more by those with no education than by those with a middle or high school education (p=0.02) (Table 9). Expression of three common symptoms (sleeping difficulties, low energy, and excessive worry) was not significantly different among demographic variables (Table 10). Still, substantial differences were evident among age groups (53.9% in 38 to 47 year olds versus 20.6% in 18 to 27 year olds) and education levels (47.4% of middle school educated versus 15.6% of high school educated).

Symptom Correlations

Though no depression symptoms were highly correlated with any PTSD symptoms, there were high correlations within symptom groups (Table 11). Overall, the most correlated depression symptoms were feeling worthless and thoughts of ending one's life ($\varphi = 0.70$). Thoughts of ending life was also highly correlated with having no interest in life ($\varphi = 0.67$), a combination expressed by approximately 10% of refugees. Trouble concentrating, an anxiety symptom, was highly correlated with PTSD symptoms staying away from reminders of traumatic events ($\varphi = 0.96$), feeling numb about a traumatic event ($\varphi = 0.94$), and constantly feeling watchful and on-guard ($\varphi = 0.94$). PTSD symptoms were highly correlated within all country groups though correlated anxiety and depression symptoms varied (Table 12). In Burmese refugees, for example, poor appetite and difficulties sleeping ($\varphi = 0.86$) were most correlated while in Bhutanese refugees, correlation were highest between difficulties sleeping and loneliness ($\varphi = 0.72$). The most correlated symptoms in Iraqi refugees were low energy and

difficulties sleeping (φ =0.91) while highest correlated symptoms in refugees from other countries included self blame and thoughts of ending one's life (φ = 0.84).

Table 1. Demographic characteristics of resettled refugees medically screened between September 2008 and March 2009 by DeKalb County Board of Health

Characteristic	TOTAL (n=138)
Sex	
Male	87 (63.0)
Female	51 (37.0)
Age, y	
18-27	34 (24.6)
28-37	34 (24.6)
38-47	26 (18.8)
48+	44 (31.9)
Marital Status	
Married	75 (54.3)
Not married	24 (17.4)
Not indicated*	39 (28.3)
Highest Education Level	
None	30 (21.7)
Elementary	28 (20.3)
Middle	19 (13.8)
High school	32 (23.2)
College +	10 (9.4)
Not indicated*	16 (11.6)
Children	
Yes	71 (51.5)
No	12 (8.7)
Not indicated*	55 (39.9)
Country	
Burma	53 (38.4)
Bhutan	36 (26.1)
Iraq	29 (21.0)
Other**	20 (14.5)
Time Elapsed (Arrival to Screening)	
1 to 7 weeks	25 (18.1)
8 weeks	47 (34.1)
9 weeks	27 (19.6)
10+ weeks	35 (25.4)
Not indicated*	4 (2.9)
Center for Torture and Trauma Survivors (CTTS) referral	
Yes	65 (47.1)
No	73 (52.9)

* Not included in analysis

**Afghanistan (3), Algeria (2), Congo (1), Eritrea (2), Ethiopia (2), Iran (1), Somalia (4), Rwanda (2), Senegal (1), Malaysia (1), Libya (1)

Table 2. Demographic characteristics of resettled refugees medically screened between September 2008 and March 2009 by DeKalb County Board of Health, by country

Characteristic	Burma (n=53)	Bhutan (n=36)	Iraq (n=29)	Other* (n=20)	p-value
Sex					
Male	39 (73.6)	17 (47.2)	18 (62.1)	13 (65.0)	0.09
Female	14 (26.4)	19 (52.8)	11 (37.9)	7 (35.0)	
Age, y					
18-27	20 (37.7)	5 (13.9)	4 (13.8)	5 (25.0)	0.003
28-37	15 (28.3)	4 (11.1)	8 (27.6)	7 (35.0)	
38-47	7 (13.2)	6 (16.7)	8 (27.6)	5 (25.0)	
48+	11 (20.8)	21 (58.3)	9 (31.0)	3 (15.0)	
Marital Status	n**=43	n**=23	n**=23	n**=10	
Married	30 (69.8)	21 (91.3)	19 (82.6)	5 (50.0)	0.04
Not married	13 (30.2)	2 (8.7)	4 (17.4)	5 (50.0)	
Not indicated***	10	13	6	10	
Highest Education Level	n**=50	n**=30	n**=26	n**=16	
None	12 (24.0)	17 (56.7)	1 (3.8)	0 (0)	<0.0001
Elementary	17 (34.0)	4 (13.3)	3 (11.5)	4(25.0)	
Middle	7 (14.0)	2 (6.7)	6 (23.1)	4 (25.0)	
High school	13 (26.0)	5 (16.7)	8 (30.8)	6 (37.5)	
College +	1 (2.0)	2 (6.7)	8 (30.8)	2 (12.5)	
Not indicated***	3	6	3	4	
Children	n**=31	n**=23	n**=20	n**=9	
Yes	21 (67.7)	23 (100.0)	20 (100.0)	2 (22.2)	0.001
No	10 (32.2)	0 (0)	0 (0)	7 (77.8)	
Not indicated**	22	13	9	11	
Time Elapsed (Arrival to Screening)	n**=52	n**=34	n**=29	n**=19	
1 to 7 weeks	9 (17.3)	8 (23.5)	4 (13.8)	4 (21.1)	0.95
8 weeks	17 (32.7)	10 (29.4)	12 (41.4)	8 (42.1)	
9 weeks	11 (21.2)	8 (23.5)	6 (20.7)	2 (10.5)	
10+ weeks	15 (28.9)	8 (23.5)	7 (24.1)	5 (26.3)	
Not indicated*	1	2		1	

*Afghanistan (3), Algeria (2), Congo (1), Eritrea (2), Ethiopia (2), Iran (1), Somalia (4), Rwanda (2), Senegal (1), Malaysia (1), Libya (1)

**Valid responses, not including missing/not indicated variables

*** Not included in analyses

Table 3. Missing values of mental health symptoms (listed in ascending order of frequency of missing)

Symptom	**Missing values* n (%)**
Problems with intimacy	40 (29.0)
Loss of sexual interest	40 (29.0)
Restless, unable to sit still	38 (27.5)
Feeling trapped or caught	37 (26.4)
Feel like traumatic event did not happen	36 (26.1)
Recurrent nightmares	36 (26.1)
Feelings about it numb	36 (26.1)
Trouble concentrating	36 (26.1)
Feeling worthless	36 (26.1)
Try not to think of event	35 (25.4)
Everything an effort	35 (25.4)
Hopeless future	35 (25.4)
Reminder of events brings back feelings	34 (24.6)
Pictures pop into mind when reminded	34 (24.6)
Irritable, angered	34 (24.6)
Stay away from reminders	33 (23.9)
Watchful, on-guard	33 (23.9)
No interest	33 (23.9)
Worry, nervous	33 (23.9)
Thoughts of ending life	33 (23.9)
Cry easily	32 (23.2)
Self blame	32 (23.2)
Low energy, slow	31 (22.5)
Poor appetite	31 (22.5)
Lonely	31 (22.5)
Sad	30 (21.7)
Sleep difficulties	29 (21.0)
Excessive worry	28 (20.3)

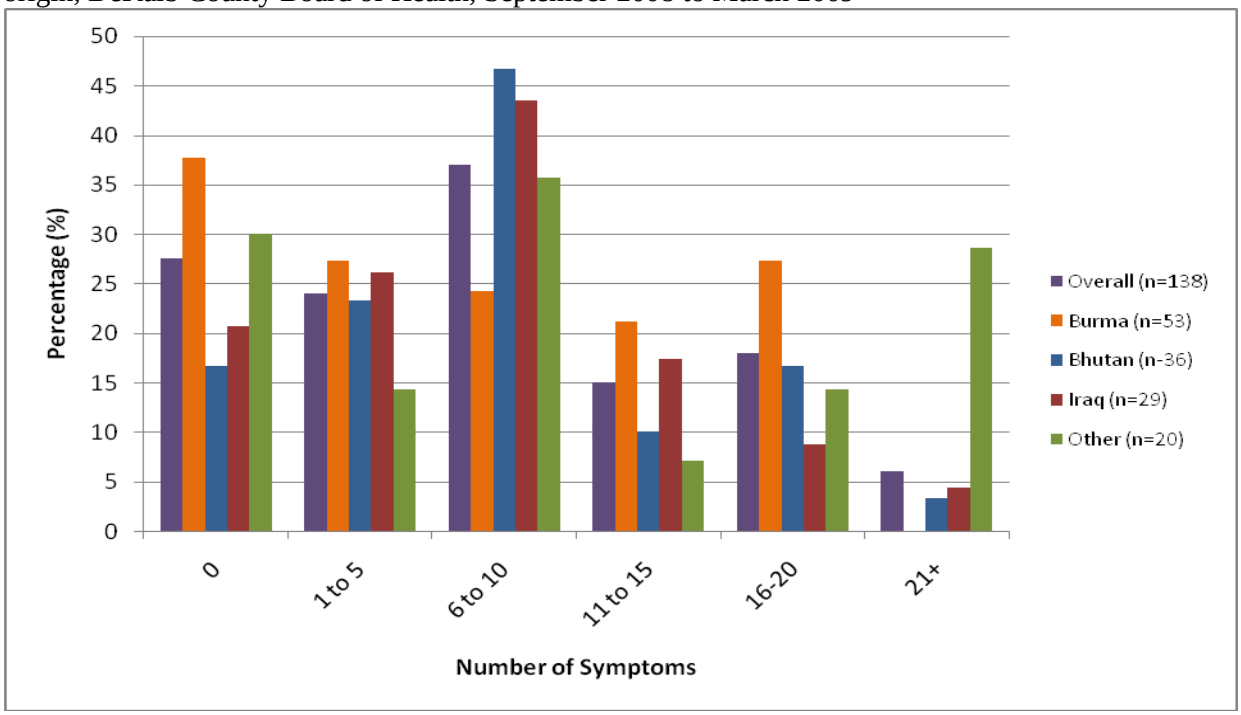
*Not included in analyses

Table 4. Rankings of mental health symptoms of resettled refugees according to frequency of expression*, by country, DeKalb County

	Overall (n=138)*		Burma (n=53)*		Bhutan (n=36)*		Iraq (n=29)*		Other (n=20)*	
Mental Health Symptom	**Rank**	**n (%)**	**Rank**	**n (%)**	**Rank**	**n (%)**	**Rank**	**n (%)**	**Rank**	**n (%)**
Excessive worry	1	67 (60.9)	7	19 (43.2)	5	18 (60.0)	1	19 (82.6)	1	11 (84.6)
Sleep difficulties	2	66 (60.6)	1	23 (52.3)	3	22 (75.9)	4	11 (47.8)	3	10 (76.9)
Low energy, slow	3	65 (60.8)	2	22 (50.0)	1	24 (88.9)	6	9 (40.9)	4	10 (76.9)
Poor appetite	4	61 (57.0)	3	22 (50.0)	2	23 (79.3)	9	8 (36.4)	7	8 (66.7)
Lonely	5	60 (56.1)	8	19 (43.2)	4	18 (62.1)	3	13 (61.9)	5	10 (76.9)
Sad	6	60 (55.6)	16	17 (38.6)	6	16 (57.1)	2	16 (69.6)	2	11 (84.6)
Reminder of events brings back feelings	7	47 (45.2)	5	20 (46.5)	12	10 (38.5)	5	10 (43.5)	9	7 (58.3)
Try not to think of event	8	45 (43.7)	6	19 (45.2)	8	11 (40.7)	10	8 (36.4)	10	7 (58.3)
Stay away from reminders	9	44 (41.9)	4	21 (48.8)		8 (29.6)	12	8 (34.8)	11	7 (58.3)
Pictures pop into mind when reminded	10	44 (42.3)	10	18 (42.9)	14	9 (33.3)	7	9 (39.1)	8	8 (66.7)
Feel like traumatic event did not happen	11	42 (41.2)	9	19 (42.2)	16	8 (32.0)	13	8 (34.8)	12	7 (58.3)
Recurrent nightmares	12	42 (41.2)	11	18 (42.9)	17	8 (32.0)	8	9 (39.1)	13	7 (58.3)
Feelings about it numb	13	41 (40.2)	12	18 (42.9)	11	10 (40.0)	18	7 (30.4)	18	6 (50.0)
Trouble concentrating	14	41 (40.2)	13	17 (42.5)	15	9 (33.3)	14	8 (34.8)	25	2 (15.4)
Watchful, on-guard	15	39 (37.1)	14	17 (40.5)	18	8 (29.6)	19	7 (30.4)	14	7 (53.8)
Loss of sexual interest	16	39 (39.8)	15	17 (39.5)	7	13 (17.2)	24	3 (13.6)	17	6 (66.7)
Cry easily	17	37 (34.9)	17	10 (23.3)	13	10 (35.7)	11	8 (36.4)	6	9 (69.2)
Self blame	18	26 (24.5)	18	5 (11.6)	19	8 (28.6)	15	8 (34.8)	20	5 (41.7)
Everything an effort	19	24 (23.3)	21	2 (4.9)	9	11 (37.9)	22	4 (19.1)	15	7 (58.3)
No interest	20	21 (20.0)	24	1 (2.4)	20	8 (28.6)	20	7 (30.4)	21	5 (41.7)
Feeling trapped or caught	21	19 (18.8)	23	1 (2.6)	21	7 (25.0)	23	4 (18.2)	16	7 (58.3)
Hopeless future	22	18 (17.5)	19	4 (9.8)	22	7 (25.0)	28	2 (8.7)	19	5 (45.5)
Feeling worthless	23	13 (12.8)	25	1 (2.4)	23	6 (21.4)	26	2 (9.5)	22	4 (33.3)
Worry, nervous	24	13 (12.4)	22	2 (4.7)	25	2 (7.4)	16	7 (31.8)	26	2 (15.4)
Thoughts of ending life	25	11 (10.5)	26	0 (0)	24	5 (17.2)	27	2 (9.1)	23	4 (33.3)
Problems with intimacy	26	10 (10.2)	27	0 (0)	28	1 (3.7)	21	6 (30.0)	24	3 (25.0)
Irritable, angered	27	9 (8.7)	28	0 (0)	27	1 (3.8)	17	7 (31.8)	27	2 (15.4)
Restless, unable to sit still	28	8 (8.0)	20	3 (7.0)	26	2 (7.4)	25	2 (11.1)	28	1 (8.3)

*See table 3 for missing values, not included in analysis

Figure 4. Percentage who expressed mental health symptoms by number of symptoms and country of origin, DeKalb County Board of Health, September 2008 to March 2009



Note: Subjects reporting 0 symptoms had noted history of torture/trauma (n=65).

Figure 5. Percentage of refugees who expressed five most common overall mental health symptoms by country of origin, DeKalb County Board of Health , September 2008 to March 2009

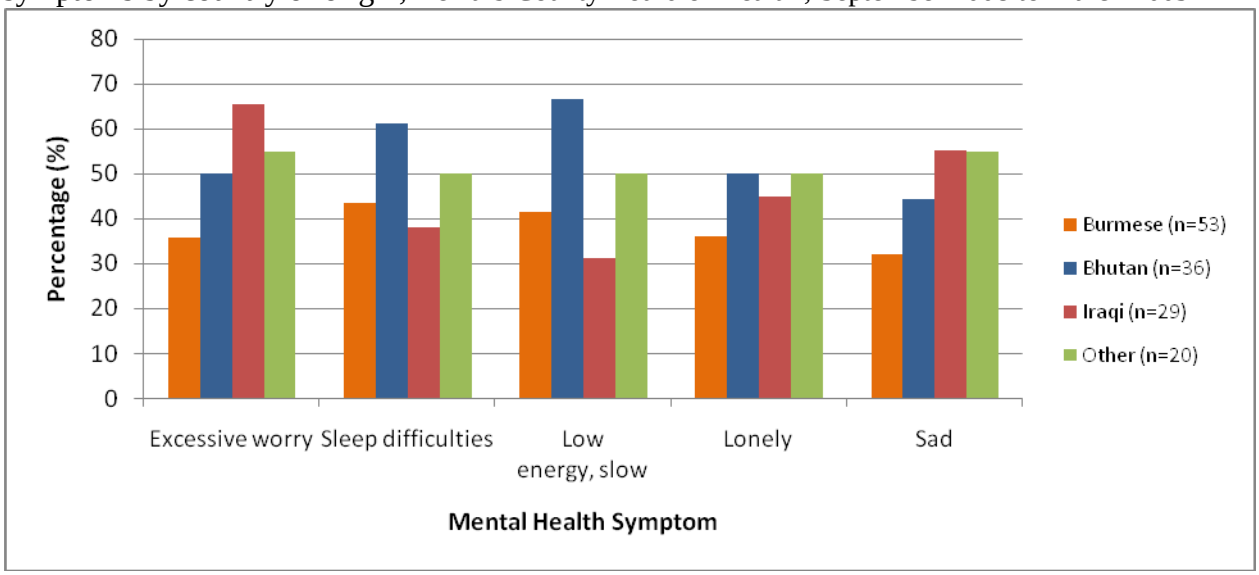


Table 5. Mental health symptoms expressed by refugees, by country of origin, DeKalb County Board of Health, September 2008 to March 2009

	Burmese (n=53)	Bhutanese (n=36)	Iraqi (n=29)	Other* (n=20)	p-value
Anxiety Symptoms					
Excessive worry	19 (43.2)	18 (60.0)	19 (82.6)	11 (84.6)	0.004
Sleep difficulties	23 (52.3)	22 (75.9)	11 (47.8)	10 (76.9)	0.07
Low energy, slow	22 (48.9)	24 (88.9)	9 (40.9)	10 (76.9)	0.008
Trouble concentrating	17 (42.5)	9 (33.3)	8 (34.8)	7 (58.3)	0.47
Irritable, angered	0 (0)	1 (3.9)	7 (31.8)	1 (7.7)	0.002
Depression Symptoms					
Poor appetite	22 (50.0)	23 (79.3)	8 (36.4)	8 (66.7)	0.01
Lonely	19 (43.2)	18 (62.1)	13 (61.9)	10 (76.9)	0.11
Sad	17 (38.6)	16 (57.1)	16 (69.6)	11 (84.6)	0.01
Loss of sexual interest	17 (39.5)	13 (54.2)	3 (13.6)	6 (66.7)	0.01
Cry easily	10 (23.3)	10 (35.7)	8 (36.4)	9 (69.2)	0.03
Self blame	5 (11.6)	8 (28.6)	8 (34.8)	5 (41.7)	0.06
Everything an effort	2 (4.9)	11 (37.9)	4 (19.1)	7 (58.3)	0.002
No interest	1 (2.4)	8 (28.6)	7 (30.4)	5 (41.7)	0.0004
Feeling trapped or caught	1 (2.6)	7 (25.0)	4 (18.2)	7 (58.3)	0.002
Hopeless future	4 (9.8)	7 (25.0)	2 (8.7)	5 (45.5)	0.02
Feeling worthless	1 (2.44)	6 (21.4)	2 (9.5)	4 (33.3)	0.01
Thoughts of ending life	0 (0)	5 (17.2)	2 (9.1)	4 (33.3)	0.001
PTSD Symptoms					
Reminder of events brings back feelings	20 (46.5)	10 (38.5)	10 (43.5)	7 (58.3)	0.71
Try not to think of event	19 (45.2)	11 (40.7)	8 (36.4)	7 (58.3)	0.65
Stay away from reminders	21 (48.8)	8 (29.6)	8 (34.8)	7 (58.3)	0.23
Pictures pop into mind when reminded	18 (42.9)	9 (33.3)	9 (39.1)	8 (66.7)	0.27
Feel like traumatic event did not happen	19 (45.2)	8 (32.0)	8 (34.8)	7 (58.3)	0.39
Recurrent nightmares	18 (42.9)	8 (32.0)	9 (39.1)	7 (58.3)	0.49
Feelings about it numb	18 (42.9)	10 (40.0)	7 (30.4)	6 (50.0)	0.68
Watchful, on-guard	17 (40.5)	8 (29.6)	7 (30.4)	7 (53.9)	0.42
Worry, nervous	2 (4.7)	2 (7.4)	7 (31.8)	2 (15.4)	0.01
Problems with intimacy	0 (0)	1 (3.7)	6 (30.0)	3 (25.0)	0.0007
Restless, unable to sit still	3 (7.0)	2 (7.4)	2 (11.1)	1 (8.3)	0.95

*Afghanistan (3), Algeria (2), Congo (1), Eritrea (2), Ethiopia (2), Iran (1), Somalia (4), Rwanda (2), Senegal (1), Malaysia (1), Libya (1)

Table 6. Mental health symptoms expressed by refugees by sex, DeKalb County Board of Health, September 2008 to March 2009

	Male (n=87)	Female (n=51)	p-value
Anxiety Symptoms			
Excessive worry	41 (58.6)	26 (65.0)	0.50
Sleep difficulties	41 (58.6)	25 (64.1)	0.57
Low energy, slow	38 (55.9)	27 (69.2)	0.17
Trouble concentrating	30 (46.2)	11 (29.7)	0.10
Irritable, angered	5 (7.5)	4 (10.8)	0.72
Depression Symptoms			
Poor appetite	40 (58.0)	21 (55.3)	0.79
Lonely	38 (55.1)	22 (57.9)	0.78
Sad	37 (53.6)	23 (59.0)	0.60
Loss of sexual interest	27 (40.9)	12 (37.5)	0.75
Cry easily	17 (25.4)	20 (51.3)	0.01
Self blame	18 (26.5)	8 (21.1)	0.53
Everything an effort	13 (20.0)	11 (29.0)	0.30
No interest	11 (16.4)	10 (26.3)	0.22
Feeling trapped or caught	12 (19.1)	7 (18.4)	0.94
Hopeless future	12 (18.8)	6 (15.4)	0.66
Feeling worthless	7(10.8)	6 (16.2)	0.43
Thoughts of ending life	6 (9.1)	5 (12.8)	0.55
PTSD Symptoms			
Reminder of events brings back feelings	32 (48.5)	15 (39.5)	0.37
Try not to think of event	32 (49.2)	13 (34.2)	0.14
Stay away from reminders	33 (49.3)	11 (29.0)	0.04
Pictures pop into mind when reminded	31 (47.0)	13 (34.2)	0.20
Feel like traumatic event did not happen	32 (49.2)	10 (27.0)	0.03
Recurrent nightmares	30 (46.2)	12 (32.4)	0.18
Feelings about it numb	30 (46.2)	11 (29.7)	0.10
Watchful, on-guard	30 (44.8)	9 (23.7)	0.03
Worry, nervous	6 (9.0)	7 (18.4)	0.16
Problems with intimacy	6 (10.0)	4 (10.5)	1.0
Restless, unable to sit still	5 (7.8)	3 (8.3)	1.0

Table 7. Mental health symptoms expressed by refugees, by age group, DeKalb County Board of Health, September 2008 to March 2009

	18-27yrs (n=34)	28-37 yrs (n=34)	38-47 yrs (n=26)	48+ yrs (n=44)	p-value
Anxiety Symptoms					
Excessive worry	12 (42.9)	18 (69.2)	17 (85.0)	20 (55.6)	0.02
Sleep difficulties	16 (57.1)	14 (53.9)	15 (79.0)	21 (50.0)	0.34
Low energy, slow	14 (48.3)	17 (65.4)	14 (73.7)	20 (60.6)	0.33
Trouble concentrating	9 (37.5)	14 (58.3)	9 (47.4)	9 (25.7)	0.08
Irritable, angered	3 (11.1)	1 (4.0)	2 (10.5)	3 (9.1)	0.82
Depression Symptoms					
Poor appetite	14 (51.9)	15 (60.0)	12 (63.2)	20 (55.6)	0.87
Lonely	12 (44.4)	15 (57.7)	14 (77.8)	19 (52.8)	0.16
Sad	17 (32.1)	16 (44.4)	16 (55.2)	11 (55.0)	0.31
Loss of sexual interest	7 (29.2)	12 (48.0)	11 (34.7)	9 (28.1)	0.04
Cry easily	8(29.6)	10 (37.0)	5 (29.4)	14 (40.0)	0.80
Self blame	7 (26.9)	5 (19.2)	3(16.7)	11 (31.4)	0.59
Everything an effort	5 (19.2)	4 (16.0)	5 (27.8)	10 (29.4)	0.62
No interest	3 (12.0)	7 (29.9)	1 (5.6)	10 (27.8)	0.14
Feeling trapped or caught	2 (8.3)	4 (16.0)	6 (33.3)	7 (20.6)	0.24
Hopeless future	4 (7.6)	5 (19.4)	2 (6.9)	7 (25.0)	0.92
Feeling worthless	3 (11.5)	3 (12.0)	1 (5.6)	6 (18.2)	0.67
Thoughts of ending life	2 (7.7)	3 (11.5)	1 (5.6)	5 (14.3)	0.87
PTSD Symptoms					
Reminder of events brings back feelings	9 (36.0)	16 (61.5)	9 (47.4)	13 (38.2)	0.23
Try not to think of event	9 (36.0)	16 (64.0)	9 (50.0)	11 (31.4)	0.70
Stay away from reminders	11 (42.3)	15 (60.0)	9 (47.4)	9 (25.7)	0.06
Pictures pop into mind when reminded	10 (40.0)	13 (52.0)	10 (52.6)	11 (31.4)	0.32
Feel like traumatic event did not happen	10 (40.0)	13 (52.0)	9 (47.4)	10 (30.3)	0.37
Recurrent nightmares	9 (34.6)	14 (56.0)	9 (50.0)	10 (30.3)	0.18
Feelings about it numb	9 (36.0)	14 (56.0)	9 (47.4)	9 (27.3)	0.14
Watchful, on-guard	8 (30.8)	13 (52.0)	9 (47.4)	9 (25.7)	0.13
Worry, nervous	5 (18.5)	2 (8.0)	2 (10.5)	4 (11.8)	0.71
Problems with intimacy	2 (8.0)	2 (8.0)	2 (12.5)	4 (12.5)	0.85
Restless, unable to sit still	3 (12.0)	0 (0)	2 (11.1)	3 (9.4)	0.33

Table 8. Mental health symptoms expressed by refugees, by marital status, DeKalb County Board of Health, September 2008 to March 2009

	Married (n=75)	Not Married (n=24)	p-value
Anxiety Symptoms			
Excessive worry	38 (60.3)	10 (55.6)	0.79
Sleep difficulties	38 (61.3)	10 (55.6)	0.66
Low energy, slow	38 (63.3)	10 (52.6)	0.41
Trouble concentrating	27 (44.3)	6 (37.5)	0.63
Irritable, angered	3 (5.0)	1 (5.6)	1.00
Depression Symptoms			
Poor appetite	39 (62.9)	7 (41.2)	0.11
Lonely	32 (52.5)	12 (66.7)	0.29
Sad	31 (50.8)	11 (61.1)	0.44
Loss of sexual interest	26 (44.8)	4 (25.0)	0.25
Cry easily	17 (28.3)	9 (52.9)	0.08
Self blame	15 (24.6)	2 (11.1)	0.33
Everything an effort	11 (19.0)	3 (17.7)	1.00
No interest	12 (20.0)	1 (5.6)	0.28
Feeling trapped or caught	11 (19.3)	1 (6.3)	0.28
Hopeless future	8 (13.6)	4 (25.0)	0.27
Feeling worthless	5 (8.8)	2 (11.8)	0.66
Thoughts of ending life	4 (6.8)	1 (5.6)	1.00
PTSD Symptoms			
Reminder of events brings back feelings	31 (50.8)	8 (44.4)	0.64
Try not to think of event	30 (50.0)	8 (44.4)	0.68
Stay away from reminders	29 (46.8)	8 (44.4)	0.86
Pictures pop into mind when reminded	28 (45.9)	6 (33.3)	0.35
Feel like traumatic event did not happen	28 (47.5)	7 (38.9)	0.53
Recurrent nightmares	26 (44.1)	8 (47.1)	0.83
Feelings about it numb	27 (45.8)	7 (38.9)	0.61
Watchful, on-guard	26 (42.6)	6 (33.3)	0.48
Worry, nervous	3 (4.9)	4 (22.2)	0.04
Problems with intimacy	4 (7.3)	1 (5.9)	1.00
Restless, unable to sit still	6 (10.0)	0 (0)	0.33

*39 missing values not included in analysis

Table 9. Mental health symptoms expressed by refugees, by highest education level attained, DeKalb County Board of Health, September 2008 to March 2009

	None (n=30)	Elementary (n=28)	Middle (n=19)	High school (n=32)	College+ (n=10)	p-value
Anxiety Symptoms						
Excessive worry	17 (68.0)	10 (41.7)	13 (81.3)	7 (36.8)	7 (70.0)	0.02
Sleep difficulties	15 (62.5)	15 (60.0)	10 (66.7)	10 (52.6)	6 (60.0)	0.95
Low energy, slow	18 (78.3)	11 (45.8)	11 (73.3)	10 (52.6)	5 (50.0)	0.19
Trouble concentrating	10 (41.7)	10 (43.5)	6 (40.0)	4 (26,7)	5 (50.0)	0.80
Irritable, angered	1 (4.2)	0 (0)	4 (25.0)	1 (6.3)	1 (10.0)	0.06
Depression Symptoms						
Poor appetite	18 (72.0)	15 (62.5)	7 (53.9)	6 (31.6)	5 (50.0)	0.10
Lonely	15 (60.0)	9 (39.1)	9 (60.0)	11 (57.9)	4 (44.4)	0.56
Sad	12 (50.0)	12 (50.0)	12 (80.0)	8 (42.1)	7 (70.0)	0.17
Loss of sexual interest	13 (56.5)	11 (50.0)	1 (8.3)	3 (18.8)	4 (40.0)	0.02
Cry easily	5 (21.7)	8 (33.3)	8 (53.3)	4 (22.2)	5 (50.0)	0.18
Self blame	4 (16.7)	3 (13.0)	5 (35.7)	3 (15.8)	5 (50.0)	0.11
Everything an effort	5 (21.7)	4 (18.2)	6 (42.9)	2 (10.5)	2 (22.2)	0.30
No interest	4 (16.7)	3 (12.5)	3 (25.0)	4 (21.1)	3 (30.0)	0.74
Feeling trapped or caught	3 (13.6)	2 (8.7)	4 (30.8)	2 (11.1)	4 (40.0)	0.14
Hopeless future	2 (9.1)	5 (20.8)	3 (23.1)	2 (11.1)	2 (20.0)	0.71
Feeling worthless	2 (9.1)	1 (4.6)	3 (21.4)	2 (10.5)	2 (22.2)	0.42
Thoughts of ending life	2 (8.3)	1 (4.4)	2 (15.4)	2 (10.5)	2 (20.0)	0.61
PTSD Symptoms						
Reminder of events brings back feelings	11 (45.8)	11 (47.8)	9 (56.3)	5 (31.3)	4 (40.0)	0.69
Try not to think of event	12 (48.0)	10 (43.5)	7 (46.7)	6 (37.5)	4 (44.4)	0.98
Stay away from reminders	11 (44.0)	11 (47.8)	6 (40.0)	5 (31.3)	4 (40.0)	0.88
Pictures pop into mind when reminded	10 (40.0)	11 (47.8)	7 (46.7)	5 (31.3)	5 (50.0)	0.83
Feel like traumatic event did not happen	10 (41.7)	12 (52.2)	6 (42.9)	4 (25.0)	4 (40.0)	0.58
Recurrent nightmares	11 (45.8)	10 (43.5)	6 (40.0)	4 (26.7)	3 (30.0)	0.76
Feelings about it numb	10 (41.7)	10 (43.5)	5 (35.7)	6 (35.7)	4 (40.0)	0.99
Watchful, on-guard	10 (40.0)	11 (45.8)	5 (33.3)	4 (25.0)	3 (30.0)	0.72
Worry, nervous	3 (12.0)	1 (4.6)	3 (18.8)	1 (6.3)	2 (20.0)	0.61
Problems with intimacy	1 (4.4)	0 (0)	3 (20.0)	2 (13.3)	2 (22.2)	0.08
Restless, unable to sit still	1 (4.0)	2 (9.1)	2 (13.3)	1 (6.3)	0 (0)	0.82

*16 missing values not included in analysis

Table 10. Demographic characteristics of resettled refugees who expressed sleeping difficulties, excessive worry, and feeling slow or void of energy, DeKalb County Board of Health, September 2008 to March 2009

Characteristic	3-symptom expression (n=48)	p-value
Sex		
Male	29 (33.3)	0.64
Female	19 (37.3)	
Age, y		
18-27	7 (20.6)	0.06
28-37	13 (38.2)	
38-47	14 (53.9)	
48+	14(31.8)	
Marital Status		
Married	29 (38.7)	0.23
Not married	6 (25.0)	
Highest Education Level		
None	13 (43.3)	0.09
Elementary	8 (28.6)	
Middle	9 (47.4)	
High school	5 (15.6)	
College +	4 (30.8)	
Children		
Yes	27 (38.0)	1.00
No	5 (41.7)	
Country of Origin		
Burma	15 (28.3)	0.41
Bhutan	16 (44.4)	
Iraq	9 (31.0)	
Other	8 (40.0)	

Table 11. Correlations* of anxiety and depression (≥0.67) and PTSD symptoms (≥0.94) among refugees, DeKalb County Board of Health, September 2008 to March 2009

Symptoms	Phi Correlation Coefficient (φ)	Frequency (n, %)
Anxiety & Depression		
Feeling worthless and thoughts of ending life	0.70	8 (8.0)
Poor appetite and sleep difficulties	0.69	54 (51.0)
Excessive worry and sad	0.68	54 (50)
No interest in life and thoughts of ending life	0.67	10 (9.6)
PTSD		
Trouble concentrating and stay away from reminders of traumatic event	0.96	40 (39.2)
Trouble concentrating and constantly watchful/on-guard	0.94	38 (37.3)
Trouble concentrating and feeling numb about traumatic event	0.94	39 (39.0)
Constantly feeling watchful/on-guard and feeling numb about traumatic event	0.94	38 (37.3)

*All significant, $p<0.05$

Table 12. Most highly correlated anxiety and depression symptoms* among refugees, by country group, DeKalb County Board of Health, September 2008 to March 2009

Symptoms	Φ
Burma	
Poor appetite and difficulties sleeping	0.86
Sad and lonely	0.82
Excessive worry and low energy	0.82
Bhutan	
Difficulties sleeping and lonely	0.72
Feeling hopeless about future and thoughts of ending one's life	0.71
Lonely and loss of sexual interest	0.67
Iraq	
Low energy and difficulties sleeping	0.91
No interest in life and everything an effort	0.87
Feeling worthless and hopeless about one's future	0.69
Self blame and feeling trapped or caught	0.69
Other	
Self blame and thoughts of ending life	0.84
No interest in life and thoughts of ending life	0.84
Self blame and feeling worthless	0.84

*All significant, $p<0.05$
Φ Phi correlation coefficient

DISCUSSION

Summary of Findings

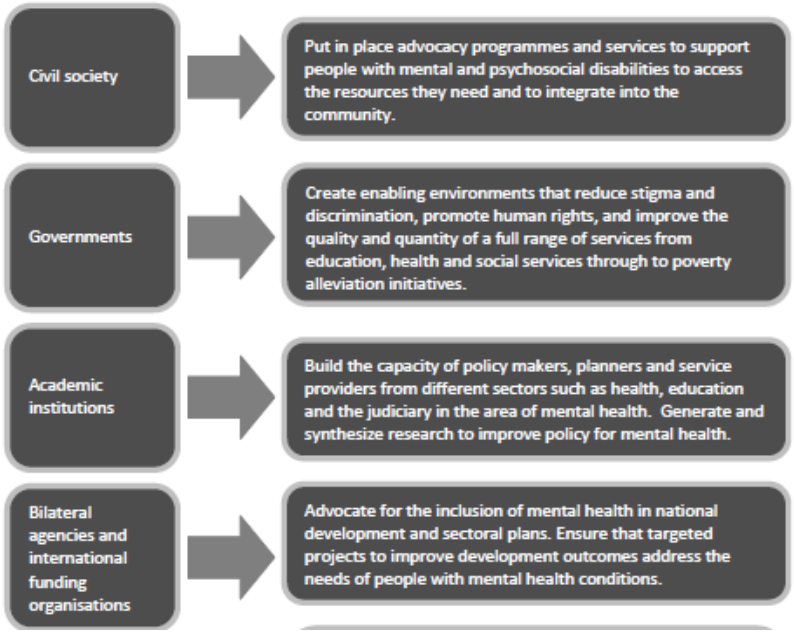
The purpose of this secondary analysis was to compile pertinent data on the mental health burden of the current populations of resettling refugees with the intent of use of findings to provide appropriate, high-quality mental health care to this vulnerable population. Specifically, medical record data of 138 refugees screened between September of 2008 and March of 2009 who expressed a minimum of four mental health symptoms were examined to provide a profile of the current mental health burden among refugees and identify specific associated demographic and factors and symptoms. The results of this analysis show a substantial mental health burden among all demographic groups. While there is an immediate need for treatment, these findings also illustrate the importance of further research to examine additional population-specific demographic variables and migratory factors that may contribute to mental health disability. Specifically, in agreement with the current literature, gender, ethnicity and post-migratory factor, learning the native language, warrant further investigation [15, 37].

The analysis demonstrates general similarities among varying ethnic groups regarding their expression of mental health disability, specifically related to PTSD, of which only three symptoms differed significantly among country groups. Commonly expressed mental health symptoms, including low energy levels and difficulties falling asleep, agree with those cited by the literature [16, 27] and highlight anxiety as a heavy mental health burden. In Iraqi refugees fear and anxiety attached to broken ties with and lost track of family members in light of still-recent exposure to trauma sheds light on the high levels of excessive anxiety experienced and greater number of PTSD symptoms expressed compared to other country groups [16, 29].

Treatment Implications

Little published research suggesting evidenced-based treatment approaches for refugees exists. Due to language and cultural barriers as well as unique circumstantial stressors innately associated with "refugee" status, treating mental disability in a comprehensive, culturally-appropriate manner is challenging and poorly-understood. Resources and properly trained staff are few. Still, early investment in refugees' well-being helps to ensure their ability to adapt and become contributing members of society [17]. Figure 6 displays the roles of all levels, as outlined by the World Health Organization, in helping to ensure proper treatment for highly-vulnerable populations including refugees [22]. The current focus is on the civil societal level, emphasizing community integration as the overarching goal. Currently in DeKalb County a number of refugee resettlement and post-resettlement organizations offer English classes and additional programs for economic and integrative growth. Still, improvement is needed on the governmental and academic levels to increase funding and advocacy for mental health programs and public education and support of these initiatives.

Figure 6. Role of societal, governmental, academic, and institutional levels in attenuating the mental health burden of vulnerable populations [22]



Suggested Treatment Approaches

In designing individual treatment plans, emphasis must continually be placed on understanding the unique ways in which various cultures understand and express mental health. Efforts must be made to incorporate culturally-sensitive approaches in order to ensure optimal usage of services and therefore, the best possible outcome. Additionally, a comprehensive treatment plan should consider the mitigation of pre- and post-migration factors that have demonstrated a large role in determining mental health status and should attempt to minimize the stigma attached with mental health and the use of mental health services. Results of recent longitudinal studies of treatment mechanisms emphasize the importance of careful, comprehensive interviews with a bilingual professional and more training for primary health providers on the unique experiences and needs of the diverse refugee populations [16].

Current research of resettled Burmese refugees in Australia suggests that post-migration factors more so than pre-migration, uniquely effect Burmese refugees' ability to settle and gain a sense of self and security in their new environment [27]. In this case, community-based interventions focused on integration and personal growth within the community are encouraged to overcome feelings of sadness and loneliness prevalent in the Burmese community [4]. Moreover, incorporating religious beliefs and social support from the refugees' ethnic community, and emphasizing personal qualities in treatment plans has shown to contribute to assist in bettering the lives of resettled refugees [21].

Integrated Approach: Physical and Mental Health

Recent studies have focused on the link between impaired physical health and mental health disability [18, 22]. Cohort studies in the US and the UK, for example, have demonstrated greater physical disability, including increased risk of ischemic heart disease, in those with

depression [43]. Similarly, refugees living with chronic physical illness, specifically cardiovascular diseases including hypertension, while simultaneously dealing with common resettlement challenges, are at increased risk of mental health disability [18, 22] . The provision of mental health services through primary care has shown to be both affordable and cost-effective and may help break down the stigma attached to seeking mental health treatment [22, 44]. Studies suggest that mental health in refugees may be addressed within primary care just as it is in native populations. Attention must be paid, however, to enquiry into social and cultural context, the use of interpreters, and integration of community beings into the treatment plan [18]. Additionally, regular primary care visits present optimal opportunity to assess mental health at the same time as physical health [44].

The Center for Torture and Trauma Survivors (CTTS)

The Center for Torture and Trauma Survivors (CTTS) based out of DeKalb County Board of Health counsels those who meet the UNHCR definition of torture via various measures depending on an individual's experiences and personal needs [45]. Common reasons for referral in this instance included history of forced labor, personal kidnapping or kidnapping of family member, and witnessing the torture or murder of a friend or family member [32]. While the Center's multi-family, group- and community-based models have shown to foster community healing, for example, their services nonetheless do not support refugees who did not specifically experience torture or trauma [34]. Under-trained staff and economic barriers have left the few other mental health services in the area inaccessible or ineffective for refugees in need of treatment [46].

Strengths and Limitations

This is the first time this data is being analyzed to inform decision-makers and local partners involved with refugee settlement. This analysis provides an overall mental health disability profile and insight into the symptomatology expressed by most prevalent current refugee populations.

This analysis has several limitations. First, the DeKalb County BoH does not maintain records of the numbers screened by country of origin; therefore, prevalence rates could not be calculated. The primary outcome variable created, "expression of top three symptoms," is notoriously hard to diagnose and harder yet to measure. The creation of this outcome measure was based on the presence of three priority mental health symptoms. Furthermore, had there been data available for those who did *not* show symptoms for mental health disability, had a history of trauma or had been referred to CTTS, a more complete understanding of factors contributing to mental health disability data could have been accomplished. Time and resources limited the ability to extract this information during the data collection process. On this same note, there is no way to validate record abstraction.

In this analysis we could not determine the timing of onset of mental health symptoms; we do not know whether the mental health symptoms started before the immigration process (due to pre-migration factors), during immigration, or came about as a result of the stressors commonly associated with post-migration circumstances (i.e. language barriers and cultural challenges) [3, 18]. This important distinction has implications regarding appropriate development of treatment plans [18]. A qualitative component of the screening process would provide for an enhanced comprehension of the refugee experience and understanding of overall mental health perceptions.

Missing Data

A plethora of missing data or "not indicated" fields in the dataset made it difficult to calculate meaningful analyses. Interestingly, symptoms associated with the highest frequency of missing variables were problems with intimacy and loss of sexual interest, both topics considered taboo to publicly discuss

or acknowledge in several cultures [47]. Several speculations may be made regarding the reason for so many missing variables – a cultural or language barrier may have hindered the data collection process and thus fields were left blank; refugees may have refused responses, again due to cultural misunderstandings; or numerous other explanations may have been in play. Regardless, the lack of data and surplus of screenings not completed implies a substantial flaw in the screening process and a dearth of appropriately trained screening professionals. A great emphasis should be placed on the development of appropriate screening tools focused on understanding varying cultures' manifestations of mental health disability.

Future Research

Refugee Children and Mental Health Screening

The dearth of mental health screening of refugee children and adolescents is an important point of discussion. Mental health needs have never been formally evaluated in refugee children under the age of eighteen [32]. The current literature proposes that children may have fewer needs due to their resilience and coping and protective factors enhanced by social networks made through school and other activities [44, 48]. Still further research supports the growing need for mental health screening and associated follow-up care for children refugees [20]. A study employing a questionnaire to assess refugee adjustment found that refugee children had poorer overall adjustment compared to ethnic minority and indigenous white children, and showed more problems with their emotions and peers [49]. High rates of depression and anxiety were prevalent among young female Mayan refugees in New Mexico whose mothers' reported somatic and psychological distress as the children depended on family and caregivers as their primary means of support [50]. A number of interventions that *have* recognized this need have focused on appropriate post-resettlement intervention based on community interaction and the

integration of mental health services into children's natural, everyday environments [49], including the school system.

The dearth of screening for children during the resettlement period often leads to complicated mental health needs accumulating as a result of the resettlement process itself being completely overlooked. Additionally, evidence suggests that significant mental health issues may not erupt until after the initial resettlement process is dealt with and more immediate needs (i.e. starting school) are met [22]. As with adults, due to cultural differences or simple lack of understanding of the situation, is has been found that refugee children are hesitant in raising issues and concerns with teachers, peers, and family members [18]. Moreover, many mental disorders beginning in childhood left untreated have significant log-term effects and greatly impair a child's transition into adulthood [23]. There is great need for focused attention on refugee children's mental health needs and support towards programs that have shown to benefit and foster children attempting to create a new life in their country of resettlement.

Need for Longitudinal Research

More longitudinal studies to evaluate the effectiveness of mental health services and to estimate the change in mental health prevalence over time are needed in order to adequately access refugee resettlement efforts and mental health care [4, 17, 26]. Moreover, evidence suggests that initial mental health illness prevalence may be lower in refugees than in the general population but overtime these figures reverse [22]. Besier studied Southeast Asian refugees settled in Canada between 1981 and 1991, assessing mental health and coping mechanisms at baseline, year 5, and year 10. Resources including like-ethnic communities and language training showed to be invaluable in attenuating the resettlement process and overtime continued to show

value [17]. The feelings associated with relationships established overtime decreased depression incidence and increased feelings of self-esteem and self-worth. Such findings – including early investment in language and general skill training as well as in social and community cohesion – showing effectiveness over time, warrant attention from policy-makers as key interventions [17, 19]. More longitudinal research is needed to reveal best practices in refugee resettlement targeting social functioning and well-being.

Conclusion

The endured trauma and challenging migratory factors facing any refugee throughout his journey begs the necessity of properly trained health care providers and local agency staff and the provision of resources to tackle the large and often overlooked burden of mental health disability in the refugee community. Though symptoms are wide-ranging, there are many that appear to span across demographic lines. Community-based methods and interventions based on integration into the host community and diminution of post-migratory factors should be emphasized as initial approaches to attenuating the mental health disability burden. Further research is needed to identify specific contributing demographic and migratory factors, to assess the timing of onset of symptoms and how this affects mental health status, and to develop an understanding of cultures' manifestations of mental health disability.

As the WHO definition of *mental health* suggests, all persons have the right to health. The Movement for Global Mental Health has emphasized this idea, launching a coalition dedicated to ensuring that all of those suffering from a mental health disorder receive proper and timely care. This analysis was an attempt to make this ideal possible by making known the mental health status of resettled refugees and providing further demographic and symptomatic information for the development of appropriate comprehensive treatment plans tailored to individual past experiences, various cultures, and personal values. Though this analysis included

limitations, the study nevertheless demonstrated a great mental health burden among resettled refugees of all demographics and the need for allocation of resources to ensure appropriate care to this highly vulnerable population.

INDEX OF APPENDICES

Appendix A. Institutional Review Board Letter of Approval

TO: Rebecca Egner
Principal Investigator

DATE: March 30, 2011

RE: **Notification of Expedited Approval**
IRB00049578
A Secondary Analysis of Mental Health and Treatment Implications in Recently-resettled Refugees

This is your notification that your above referenced study was reviewed and APPROVED by the IRB under the Expedited review process per 45 CFR 46.110(5) and 21 CFR 56.110. The approval is valid from **until 3/28/2012**. Thereafter, continued approval is contingent upon the submission of a continuing review request that must be reviewed and approved by the IRB prior to the expiration date of this study.

A request to waive informed consent has been reviewed and approved under 45 CFR 46.116(d); 1) the research is no more than minimal risk; 2)the waiver will not adversely affect the rights and welfare of the subjects; 3) the research could not practicably be carried out without the waiver; and 4) whenever appropriate, the subjects will be provided with additional information about their participation in the research. This research is not FDA-regulated.

A complete waiver of HIPAA patient authorization has been granted by the Emory University IRB for the purpose of determining eligibility of medical charts/data for this protocol. This waiver was reviewed and approved under the review procedure noted above. The approval is granted based on this board's determination that all criteria for waiver of authorization have been met.

Any reportable events (serious adverse events, breaches of confidentiality, protocol deviation or protocol violations) or issues resulting from this study should be reported immediately to the IRB and to the sponsoring agency (if any). Any amendments (changes to any portion of this research study including but not limited to protocol or informed consent changes) must have IRB approval before being implemented.

Please include the IRB ID number, the name of the Principal Investigator and the study title in any correspondence and inquiries concerning this research study.

Sincerely,

Carol Corkran, MPH, CIP
Senior Research Protocol Analyst
This letter has been digitally signed

Appendix B. Description of Data Abstraction Procedures – DeKalb Board of Record Abstraction

PROCEDURES – DEKALB BoH RECORD ABSTRACTION

Location: Occupational Health Clinic, Room 122
Contact: Nathalie Woods (nawood@dhr.state.ga.us)

Daily Procedures		Comments
Before going to the clinic	Please notify Ilond Zombil (izombil@sph.emory.edu) **no later than 3pm one day before** going to the clinic so she can have Nathalie pull files for you. The following information should be included: ▪ Time in/out ▪ # of records you plan to review	
Reviewing the records	▪ Retrieve files from Nathalie and take them to room 122 ▪ Please do not leave files unattended if at all possible (or not longer than a bathroom break) ▪ Use the Data Collection Form and the Log simultaneously ▪ Review mental health screening form (right side of patient chart) – If screening form is missing or blank: · Check "NO/BLANK MH SCREENING FORM" in log · Move on to next patient chart – If screening form is complete but no symptoms of mental health: · Check "NO MENTAL HEALTH Sx" in log (this will include ANY entry on the mental health screening tool which indicated that an evaluation has occurred; for example, if the "appropriate" item has been checked to show that the patient was assessed and was asymptomatic) · Move on to next patient chart	Record review will begin from 2009 and move backward.

	– If screening form is complete and <u>has mental health symptoms</u>: · Enter information being asked for in data collection tool · Check both "MENTAL HEALTH" & "MH ABSTRACTED" on the log ▪ Review physical health screening form (left side of patient chart) – Information can be found under Section A in the General Physical Examination form (NOTE: the data collection tool asks that you summarize some information, for example, all cardio problems are compressed into one item listed under "Cardiology". Stroke is also included in this item and is noted on the collection tool.)	
After the Review	▪ Please SAVE your log and email Ilond (izombil@sph.emory.edu) the record numbers you reviewed at that visit before you leave the clinic. Please cc Dr. Connors (knowingsoul@earthlink.net) ▪ Please return all records to Nathalie in the numeric sequence that they were in when she disbursed them	Beth will merge each member's log weekly (see below) and match log entries to files to ensure inclusivity
Weekly Procedures		
▪ Please email your data collection forms AND log to Beth Brennan (babrenn@sph.emory.edu) **<u>by close of business every Friday.</u>**		

Appendix C. Medical Record Abstraction Log (for all records of screenings, 9/08-3/09)

Georgia Coalition for Refugee Mental Health

MEDICAL RECORD ABSTRACTION LOG

DATE OF ABSTRACTION	DATE OF RECORD	STAFF NAME	RECORD #	ADULT	CHILD	NO MENTAL HEALTH SYES	NO/BLANK MH SCREENING FORM	MENTAL HEALTH	MH ABSTRACTED

Appendix D. Needs Assessment Data Collection Log (for those included in analysis)

DEMOGRAPHICS				
MEDICAL RECORD #				
NAME				
ADDRESS				
CITY, STATE, ZIP				
PHONE NO.				
DOB				
SEX (M/F)				
MARITAL STATUS				
HIGHEST EDUCATION LEVEL				
CURRENTLY LIVE WITH?				
HAVE CHILDREN?				
CHILDREN < 21 Y.O.				
CHILDREN CURRENTLY LIVE IN USA?				
ARRIVAL DATE TO USA				
COUNTRY OF ORIGIN				
ETHNICITY				
IMMIGRATION STATUS				
REFERRAL SOURCE				
LOCATION				
CLINICIAN				
SYMPTOM CHECKLIST (OBSERVATION)				
INTERVIEWER NAME				
HYGIENE, GROOMING				
MISTRUST				
AGITATION, NERVOUSNESS, ANXIETY				
CRYING SPELLS, SADNESS				
INAPPROPRIATE RESPONSE, SPEECH				
FLAT/WITHDRAWN AFFECT				
DISTRACTED, DIFF CONCENTRATING				
ANGER, HOSTILITY				
SIGNS OF CHEMICAL DEPENDENCE				
RIGID OR TENSE MUSCLES				
BIZARRE BEHAVIOR				
COMMENTS				

SYMPTOM CHECKLIST (REPORTED)				
LOW ENERGY SLOWED				
SELF BLAME				
CRY EASILY				
LOSS OF SEXUAL INTEREST				
POOR APETITE				
SLEEP DIFFICULTIES				
HOPELESS ABOUT FUTURE				
SAD				
LONELY				
THOUGHTS OF ENDING LIFE				
FEELING TRAPPED OR CAUGHT				
EXCESSIVE WORRY				
NO INTEREST				
EVERYTHING AN EFFORT				
FEELING WORTHLESS				
GENERAL HEALTH/SOCIAL FUNCTIONING				
CURRENTLY HAVE A MH PROVIDER				
MH PROVIDER CONTACT INFO				
EVER BEEN DIAGNOSED WITH EMOTIONAL PROBLEMS BY A MH PROFESSIONAL?				
GENERAL HEALTH QUESTIONNAIRE				
ABLE TO CONCENTRATE				
LOST MUCH SLEEP OVER WORRY				
FELT USEFUL				
CONSTANTLY UNDER STRAIN				
FELT COULDN'T OVERCOME DIFFICULTIES				
CAPABLE OF MAKING DECISIONS				
ABLE TO ENJOY DAY-TO-DAY ACTIVITIES				
ABLE TO FACE YOUR PROBLEMS				
FEELING UNHAPPY, DEPRESSED				
LOST CONFIDENCE IN SELF				
FEELING WORTHLESS				
REASONABLY HAPPY, ALL THINGS CONSIDERED				
IN GENERAL, YOUR HEALTH IS				
YOUR HEALTH LIMITS CARRYING GROCERIES				
YOUR HEALTH LIMITS CLIMING STAIRS				
DURING PAST MONTH, HOW MUCH TIME HAS PH OR MH INTERFERRED WITH SOCIAL ACTIVITIES				

DURING PAST MONTH, HOW MUCH TIME HAVE YOU CUT DOWN TIME SPENT ON WORK/DAILY ACTIVITIES DUE TO MH PROBLEMS		
DURING PAST MONTH, HOW MUCH TIME HAVE YOU ACCOMPLISHED LESS THAN WANTED DUE TO MH PROBLEMS		
DURING PAST MONTH, HOW MUCH TIME DID YOU DO YOUR WORK LESS CAREFULLY THAN USUAL DUE TO MH PROBLEMS		

SELF-REPORTED SYMPTOMS (DISTRESS)				
LOW ENERGY, SLOWED DOWN				
BLAMING YOURSELF				
CRYING EASILY				
LOSS OF SEXUAL INTEREST				
POOR APPETITE				
DIFFICULTY FALLING/STAYING ASLEEP				
HOPELESS ABOUT FUTURE				
SAD				
LONELY				
THOUGHTS OF ENDING YOUR LIFE (SUICIDAL)				
FEEL TRAPPED, CAUGHT				
WORRYING TOO MUCH				
NO INTEREST				
EVERYTHING IS AN EFFORT				
WORTHLESSNESS				
SELF-REPORTED DIFFICULTIES (PTSD)				
REMINDER OF EVENT BROUGHT BACK FEELINGS				
FELT LIKE TRAUMATIC EVEN DIDN'T HAPPEN				
STAYED AWAY FROM REMINDERS OF IT				
PICTURES ABOUT IT POPPED INTO MIND				
TRIED NOT TO THINK ABOUT IT				
FEELINGS ABOUT IT NUMB				
TROUBLE CONCENTRATING				
WATCHFUL, ON-GUARD				
RECURRENT NIGHTMARES ABOUT IT				
PROBLEMS WITH INTIMACY, FEELING CLOSE				

WORRY, NERVOUS MOST OF THE TIME				
FEEL WORTHLESS				
FEEL LIKE A GOOD PERSON				
RESTLESS AND UNABLE TO SIT STILL AT TIMES				
IRRITABLE, EASILY ANGERED				
COMFORTABLE AROUND PEOPLE				
TROUBLE CONCENTRATING				
PHYSICAL HEALTH				
HIV				
TB				
STD/STI (OTHER THAN HIV)				
HANSEN'S DISEASE				
ADDICTION ABUSE				
CARDIOLOGY, INCLUDES STROKE (ANY ONE CHECKED)				
SEIZURE DISORDER				
SUICIDE ATTEMPT/END LIFE				
OTHER COMMENTS/INFORMATION				

Appendix E.

Table 12. Demographic characteristics of refugees with a blank screening form or form with all symptomatic fields not indicated, DeKalb County Board of Health, September 2008 to March 2009

Characteristic	All Symptomatic Fields Indicated as "NI" n=17 (12.3%)	Blank Screening Form n=6 (4.3%)
Sex		
Male	11 (64.7)	3 (50.0)
Female	6 (35.3)	3 (50.0)
Age, y		
18-27	4 (23.5)	1 (16.7)
28-37	3 (17.6)	3 (50.0)
38-47	4 (23.5)	2 (33.3)
48+	6 (35.3)	0 (0)
Marital Status		
Married	5 (29.4)	3 (50.0)
Not married	4 (23.5)	2 (33.3)
Not indicated	8 (47.1)	1 (16.7)
Highest Education Level		
None	3 (17.7)	0 (0)
Elementary	2 (11.8)	0 (0)
Middle	2 (11.8)	0 (0)
High school	8 (47.1)	5 (83.3)
College +	2 (11.8)	1 (16.7)
Children		
Yes	5 (29.4)	5 (83.3)
No	2 (11.8)	1 (16.7)
Not indicated	10 (58.8)	0 (0)
Time Elapsed (Arrival to Screening)		
1 to 7 weeks	3 (17.6)	0 (0)
8 weeks	2 (11.8)	5 (83.3)
9 weeks	5 (29.4)	0 (0)
10+ weeks	7 (41.2)	1 (16.7)
Country of Origin		
Burma	8 (47.1)	0 (0)
Bhutan	3 (17.7)	0 (0)
Iraq	3 (17.7)	3 (50.0)
Other	3 (17.7)	3 (50.0)

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