**INTRODUCTION**

Since the last two decades, the scientific literature has shown increasing amount of evidence that traditional expert-driven intervention approaches are often less effective in resolving the ever increasing complex community health challenges1. Many communities now demand for mutually respectful and dynamic partnerships in planning and implementation of community based public health interventions. It has also been shown that the best approaches to ameliorating public health challenges include those that assess community’s knowledge of prevailing local problems and readiness to take action. This demands for greater community – academic partnership to augment community engagement in policy advocacy for eliminating health discrepancies, where primary role of such partnership is to bring evidence–based interventions.2-4 Furthermore, community partners demand that participants should not only be taken as ‘study subjects’ and research should be a secondary aim. Such community – based participatory research (CBPR) effectively addresses doubts that exist within communities and gives viable opportunities to academia to train public health practitioners5. Community participation is used as a vital tool in a process of collecting information, known as community assessment, or community health assessment. It is a process of collecting, analyzing and reporting information about the needs in a community as well as its strengths and assets6. The purpose is to identify unmet community needs and plan ways to meet them.

Tehran University of Medical Sciences (TUMS) has a rich history of conducting community assessments educational projects in Iran for more than two decades. Community assessment as a model for community based learning started in 1989 at the medical school. It was later modified and shifted to the post graduate program under the supervision of department of Epidemiology and Biostatistics of School of Public Health. Community assessment program is now an integral part of the curriculum of various degree programs (MD–MPH, MPH, International MPH, MPH [field epidemiology] and MSc. [epidemiology]) and prerequisite for PhD (epidemiology), offered at School of Public Health. Currently, this school is running three research stations; 7 Kazeroun Health Research Center, Meshkin–Shahr Health Research Center and WHO Regional Malaria Training Centre, Bandar Abbas Health Station that are engaged in community assessments across the country.

This paper documents the processes undertaken during community assessments in the Chahastaniah community in Bandar Abbas city, with special emphasis on interdisciplinary, multifaceted, culturally sensitive and locally relevant community assessment. Here, we will describe the framework for conducting collaborative community assessments and steps which were followed to train public health students, as well as community; where community was given a principal role for determining the focus of assessment and later developing strategies to intervene and their contribution in conducting action plan.

**METHOD**

At School of Public Health, community assessments were conducted based on 2002 - 2014 North Carolina Community Assessment model as a guide.8 This model has been used in previous community assessments and has been considered as a reference model for Iranian context.9 North Carolina community assessment guidebook guides communities and partners through the following eight steps to conduct a comprehensive and collaborative community assessment.

**Eight – Step of Community Assessment & Diagnosis**

***Step one: Establishing a Community Assessment Team***

The community assessment team consisted of community members and experts who were willing to devote their knowledge and time for this process. The team was divided into three sub-groups, characterized according to their task: *a) advisory group, b) working group and c) course (project) facilitator*.

The advisory group consisted of community representatives, staff of healthcare center and faculty members of Hormozgan University of Medical Sciences – state university in Hormozgan province. Working group consisted of PhD and MPH (local and international) students. Female health volunteers were assigned to this group, where their major task was to overcome language barrier and help gaining trust between community and international students. Tasks of these groups included to create a link between all three sub-groups, to collect, analyze and interpret data, to present the findings to advisory group and course facilitator and finally to develop community action plan. Course facilitators were responsible for organizing, managing and leading the community assessment process. They engaged with advisory and working groups to supervise their meetings and coordinated access to support material, and served as central contact person for community members, sub-groups and officials from Hormozgan province. Also, they played key role in securing funds to conduct community assessments in Bandar Abbas city. A two – day workshop was held to give an overview on community assessment process, revision of goals and objectives of community assessment. Senior faculty member from Hormozgan University of Medical Sciences presented demographic and geographic information of Hormozgan province and provided detail account of distribution and function of health centers in the province.

Before initiation of community assessment, members of working group read all steps of community assessment from the guidebook for identifying appropriate timescale. With further suggestions from course facilitator, timeline was finalized for the assessment with specific timeframes for all the activities.

***Step two: Collecting Community Data***

This step was most time – consuming phase in community assessment process, considering inclusive approach and collecting data from multiple sources. In this phase, with the focus on primary data collection, various methods (Figure 1) were used. Unlike routine epidemiological studies, cameras were used to take pictures throughout this phase to effectively demonstrate magnitude of certain physical such as, infrastructural ailments of community.10 Rationale to collect rich data was to enable students and community members to develop most efficient action plan and provide sustainable intervention. A detail inventories for community assets were developed to represent community strengths and needs. Figure 2 displays a toolkit used to collect and present community’s map of assets, it was adopted and modified from 2014 North Carolina Community Assessment guide book.8 A community asset is a quality, person, or thing that is an advantage, a resource, or an item of value to the community. 8 This toolkit serves as *‘you don’t know what you need until you know what you have’* and recognizes community strengths and needs at three levels; individuals, associations and institutions. It can highlight resources that can be a significant help to community assessment teams as they look at problems present and then focus on identifying potential resources that community possesses.

***Step three: Gathering Secondary Data from District Health Center***

In step 3, students began collecting secondary data from district health center of Bandar Abbas. Focus of this phase was to collect data on population indices; gender and age distribution, fertility, morbidity and mortality from major diseases and their time–trends. This gave team a broader picture of health and made possible to compare study areas with health status of the district.

***Step four: Comparing Community Health Data with District’s Health Data***

The main objective of step four was to analyze and interpret data collected in previous steps. Primary (quantitative) and secondary data was analyzed and interpreted, with special attention were given to age and sex standardization. A demographic profile was created of Chahastaniah community and compared with statistics from Bandar Abbas. Data was thoroughly reviewed to ascertain any noticeable trends or changes that have occurred over the time. Also, results were compared to the previous community assessment so to identify any change from previous statistics. For qualitative data, working group reviewed data collected on recorder’s note. Two members from working group coded data according to objectives, then themes were extracted by comparing any relationship between them. Students then identified most important existing strengths and needs of this community. As a prerequisite to move towards step five, a list of problem was developed.

***Step five: Prioritizing Community Problem and Reporting to Community***

Once students gathered and analyzed primary and secondary data, they presented their findings back to the community. Course facilitator called a meeting in which community members and officials from Hormozgan University of Medical Sciences participated. Working group presented findings of their community in 30 minutes PowerPoint presentation, which was backed up with enriched data, pictures and video clips. A thorough discussion took place between community assessment teams, officials from university and community members, this discussion helped to reshape list of problems.

For prioritization of problem,11 nominal group technique was applied. Working group conducted meetings to prioritize the top three problems. All problems were given score according to three criteria; magnitude, seriousness of the consequence, and feasibility of correcting. For each criterion, members scored all the listed problems from 1 to 10, such as a problem with 10 in all three criteria would show that it is of greatest magnitude, has most serious consequence and is most feasible to correct. To get a total score of each problem, members then added scores from all three criteria. In the next step, each member reported his total score for specific problem, which were recorded by group coordinators to get mean score. Finally problems were listed according to their mean score; the problem with highest mean score was ranked first and subsequent problems listed in descending order. According to North Carolina’s model first three problems were selected for further examination of the magnitude. Following were objectives of three studies:

* *To determine the prevalence of pediculosis and its related factors in the neighborhood of Chahastaniah and to develop action plan, Bandar Abbas - 2015*
* *To determine knowledge, attitudes and practices of water – pipe smoking and its related factors in the neighborhood of Chahastaniah, and to develop action plan, Bandar Abbas – 2015*
* *To determine the prevalence of malnutrition and its related factors among 2 – 6 year old children in the neighborhood of Chahastaniah, and to develop action plan, Bandar Abbas – 2015*

The rationale for conducting these cross sectional studies was to get further understanding of prioritized problems that would further clarify situation for developing efficient action plan. All three studies have been completed and their findings will be published soon. This additional activity of ‘community diagnosis’ is a slight modification of the North Carolina community assessment model. During this community diagnosis, three groups of students developed proposals and after getting approval conducted studies to determine prevalence of prioritized health problems and explore their risk factors. This step of community assessment complements a course on ‘Health research system and principle of epidemiology’ that was offered to these students earlier in their academic year. It was deemed necessary to undergo community diagnosis as their results helped community assessment team to develop substantial action plans that are currently under their implementation phase.

***Step six: Creating Community Assessment Report***

Once the health priorities determined and community diagnosis was completed, the overall information was compiled in a community assessment report. Community assessment teams developed three 2 – page reports in Persian language, introducing community assessment process, highlighting community’s strengths and needs and finally presenting results from community assessment and diagnosis. For each health related problem, reports identified preventive measures and resources to avail. These reports were featured with numerous photographs from their respective communities to illuminate magnitude of the community’s weaknesses.

***Step seven: Disseminating Community Assessment Report***

The impact of community assessment report can only be accomplished when all the stakeholders can have access to it. Therefore, this report was presented to community leaders, head of district health center, representatives of mosque, school principal, and police. Also, several copies of reports were kept in healthcare center to provide an easy-access to general population.

***Step eight: Developing Community Action Plan***

The goal of step eight is to develop intervention for the problem, which the community identified as high – priority issue. The key point in developing action plan is to present a set of solutions for the prioritized issue which should be, from the point of view of implementation, socially acceptable and practically achievable. Working group developed measurable objectives to address prioritized problems, identified evidence – based interventions, and proposed realistic plans of evaluation. Three action plans were developed based on three prioritized problems, as mentioned in step 5. It was made sure that each intervention strategy was aligned with political, social and religious values of the community. In developing plan of action, map of community asset was referred to identify any individual or association that can play a role in implementation of community action plan.

Finally, a session was conducted to present summary of community assessment and diagnosis in a presentation in which School’s Dean, Deputy Dean, and Vice-Dean for International Affairs gave their feedbacks to students. Students presented their work in form of oral presentations, poster presentations, and video clips.12 At the end of session, students were given feedback form in which they mentioned how the experience of community assessment affected them. According to one student, he felt that:

*“We work together as a team and this helps us to increase our knowledge.”*

For other student, this internship was an unforgettable experience, which he will always remember as a most unique learning experience, as he stated:

*“Thank you, it is a moment one will never forget in life. The session is educative, informative and filled with experiences.”*

**DISCUSSION**

This framework of community assessment provides a comprehensive tool to evaluate impact of healthcare system. Advocacy for community assessment will call for re-balancing of resources and funds from individualist clinical and biomedical views of the world with more focus on community.13 Community participation is one approach to reduce inequalities in health within and across various communities as it allows development in health, economic growth, and eventually social integration. It demands active participation of all shareholders from community, and their priority of health problems may not necessarily come to an agreement to those of professionals.

Community assessment, from community’s point of view, brought opportunities to share with academicians, public health practitioners and community partners what they have experienced how to address social determinants of health. In a scenario where local stakeholders are weak or fail to represent local population, health structure may become fragile and ineffective, and such situation will result in decision–making from professionals. Thus, sustainable health reforms depend on engagement of all stakeholders, local organizations and competent leadership, identified through effective community assessment. This assessment program provides community with contentedness and sense of belonging which in return motivates them to participate in finding problem and soliciting most feasible solution. Engaging community members in assessment program is a prerequisite in identifying social determinants of health.

In this paper we described how 8 – step community assessment implemented through public health students, that provided them an added research skill particularly justified for addressing gaps in healthcare provision and achieving local impacts. We attempted to demonstrate the process of commitment from both community and public health students for the betterment of community health status, where both community and researcher share set of responsibilities and resources. Contrary to a commonly stated concern regarding community – based research activities during academic course distracting from conventional academic production, graduates participated in community – based research activities have reported to have higher research and academic productivity,14 from previous experience at TUMS, graduates have successfully published their community assessments and diagnosis.15 - 20 From teaching perspective, community assessment is one of the ways in which they can return something to their community and can connect to community more vividly.21 Teaching methodologies that are unconventional and unpredictable, but practice – based is getting attraction, and community assessment is one of such strategies.22 Utilizing both formal and informal methods for collecting data provided students wider opportunities to explore weakness in community’s health and social weakness. Also, engaging public health students in this community – based research has proven high – impact learning strategy, and in one study, it was evident that it can help reducing health disparities.23 Evaluation of this course showed that students have gain substantial practical aspect of community assessment, giving them more skills on collaboration, communication, and negotiation, which they can apply in traditional research. Students can use this skill in need assessment program or for program evaluation.24 In terms of medical education, community – academic partnership acts like a “catalyst” in providing enriched ground for students learning methods for identifying community’s health issues25 and such collaboration builds public’s trust in medical research and engages them to participant in research. Furthermore, community assessment plays role of interdisciplinary research activity, in which public health students bring knowledge learned from various courses and apply in the process of community assessment and later in developing action plan. This exercise made students able to address the socio-economic and environmental factors, collectively known as social determinants of health, affecting all stages of lives of community members.

The major limitation that was faced during this academic – community engagement process was limited amount of time available to students. If the community assessment process was given more time span, further interviews could have been conducted and the students would have been able to contact a more diverse population of community members. Despite many benefits, community based learning demands greater level of resources (both personal and institutional) and commitment in comparison to conventional research.14 Students faced greater expectations from faculty and required more time for establishing relationship with community.

**CONCLUSION**

Community assessment is one of the core competencies of public health professionals as it gives practitioners a better understanding of strengths and weaknesses of their policy decisions.26 – 27 It encourages students to think critically, solve challenging public health problems in the communities, and develop variety of skills including communication, public health research skills, team work, priority setting, program planning implementation and monitoring. Integrating it within curriculum of public health courses is vital and beneficial for both, communities and future public health practitioners. Success in improving community health by adopting collaborative approach is illuminated during community assessment. Results from community assessment, which unfolded demographic, socioeconomic, cultural and health status of the local population, should be considered in developing provisional and national health policy.

**Compliance with Ethical Standards:**

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