Online psychological service for health professionals

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Name(s) of Researcher/Members of Research Team:

1. Ariunsanaa Bagaajav
2. Sugarmaa Myagmarjav
3. Saranchuluun Otgon
4. Huderchuluun Nanjid
5. Khandsuren Khurelbaatar
6. Enkhjargal Tsoodol
7. Purevdavaa Ganbayar
8. Khandmaa Sukhbaatar

DREAM IT Designated Board member: Batpurev Batchuluun - CEO, ITCS Co. Ltd

Contact Information of Researcher/Research Team members:

- School of Public Health, Health Sciences University, Zorig str, 48/111. Ulaanbaatar, Mongolia. (b.ariunsanaa@yahoo.com)
- Setgeliin Toli, United Nations str, Chingeltei district, 20, apt-34. Ulaanbaatar. Mongolia. (khandaa2137@yahoo.com)

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Abbreviation/acronyms

FtF	Face to face
ERI	Effort-Reward Imbalance
MoH	Ministry of Health
ICT	Information Communication Technology

Tables

ABSTRACT

Work in healthcare sector is characterized by high level of work stress internationally. Information technology mediated behavioral and psychology cares are widespread around the world. Through synchronous chat based format, the present trial examined the difference between effectiveness of online and face-to-face counseling both led by cognitive behavioral approach for doctors and nurses who experienced psychological conditions.

The purpose of the present research project was to examine the differential effectiveness of online counseling which is synchronous chat and face to face counseling led by cognitive-behavioral approach for the doctors and nurses who experienced burnout and depression. Online counseling and face-to-face counseling interventions had similar effect in reducing the symptoms of depression and anxiety. Personal burnout scale was more feasible in determining effectiveness of this intervention.

Keywords: Mongolia, doctors, nurse, burnout, online counseling

I. THE RESEARCH PROBLEM

During last decades the workplace has been changed dramatically due to factors like globalization, the use of information and communication technologies, continuous reorganizations and an increased workload, especially mental and emotional demand. As a result, occupational health research in developed countries has been conducted on psychosocial factors at work place that may affect beyond traditional occupational diseases (Siegrist, 2006). Evidence from studies indicated health professionals is exposed to relatively high workload and emotional demand, poor work condition and irregular work schedule and shift work (Weyers, 2006). After its radical socio-economic transition in 1990, Mongolian health care system was renewed in terms of financing, service delivery, and numerous terms had been applied such as compulsory national health insurance system and primary health care strategy and family medicine thus overall direction of development shifted from curative to preventive approach. To assist health professionals in Mongolia deal with their workload and stress problems, this project was to design facilities for them to access psychological service in distance, non face-to-face mode which is easier in terms of physical approaching, time-flexible and more cost-effective than face-to-face (FtF) services. The implementation of this project will contribute to the strengthening of health professionals' communicational skills by encouraging their psychological education and hence address some causal problems of the current poor health care services in the country.

During the revising and refining process of the project proposal and methodology we found out that certain occupations are at greater of risk of developing burnout and depression. Reviews of the burnout literature documented that burnout is as a consequence of one's exposure to chronic job stress (Borritz, 2005). The chronic stresses may lead to burnout. Burnout has been shown to be more job-related and situation-specific relative to emotional distress such as depression (Maslach, Schaufeli, & Leiter, 2001). Among the major theoretical approaches to work-related stress and its outcomes reviewed in Cooper (1998), those that have been applied to investigate stress – burnout relations are the demand-control-support model, the effort-reward imbalance (ERI) perspective (Borritz, 2005). Depression, on the other hand, is a modifiable risk factor for

chronic psychosocial stress at work. There is number of pospective and cross-sectional studies concerning ERI at work and depression. They documented strong associations of the extrinsic and intrinsic component of the ERI model with depressive symptoms in a various type of working population (Siegrist, 2008).

While the relationship between the high workload of health professionals and psychological indicators were recognized to some extent worldwide, in Mongolia, it has received little attention and hence no research has been developed that explores health professionals' psychological indicators. Online counseling services are currently being provided in a variety of formats and are expected to increase in the next 10 years (Norcross et al., 2002; Stamm, 1998). Clients use videoconferencing, synchronous chat, and asynchronous e-mail with professional psychologists in place of or in addition to FtF counseling. Whereas more than 100 million people searching the Internet for health information (Harris Interactive, 2002) and with the demand for actual health care services increasing (Grover et al, 2002). Online counseling services are frequently used and been tested its effectiveness in mental and behavioral services for those who can't physically meet, for instance, mental health professionals (Oravec, 2000). The experiment was conducted in Ulaanbaatar as the proportion of health professionals is larger and specialized health care is centralized in the city.

II. OBJECTIVES

The project was implemented with an aim to study the effectiveness of online counseling service for health professionals in Ulaanbaatar. To serve this general objective following specific objectives were determined.

1. To study the psychological needs of health professionals for mapping the nature of their psychological problems against a framework of indicators of psychologically high-risk factors

2. To design, develop and pilot an online psychological service for health professionals

3. To conduct an experimental design study of the effectiveness of the online psychological service

III.METHODOLOGY

There were 2 main activities in the project which required research design and method.

3.1. BASELINE SURVEY

Job stress, burnout and depression among doctors and nurses of Ulaanbaatar

Theoretical background

Health care professionals are exposed to stressful workload which in turn is associated poor mental health, sickness absence and job exit. Several studies reported that (Kluger et al,2003) stressful aspects of anesthesiology included time constraints and interference with home life, and high demands on standards of practice and practical aspects of the job were deemed satisfying, whereas low respect and long hours were the major dissatisfying aspects of the job. While the relationship between the high workload of health professionals and psychological indicators were recognized to some extent worldwide, in Mongolia, it has received little attention and hence no research has been developed that explores health professionals' psychological indicators (such as job stress and burnout). Completed research is limited to assessments of the workload of health professionals, proportion of population to the number of health professionals, and client satisfaction with the quality of health care services.

Study design and population

A cross sectional design was used in this study. The baseline study comprised 392 participants from 10 hospitals from secondary and tertiary care level in Ulaanbaatar city. A sampling of health professionals was selected for the study using stratified random approach. 200 doctors and 200 nurses were selected by proportion principle according to the professions; pediatrician, internist, surgeon, gynecologist, and intensive care unit as well as nurses from these specialized units. (See Annex A for full report)

Measurements

Burnout

Burnout was measured by Copenhagen Burnout Inventory (Kristensen et all, 2005). This questionnaire has three sub-dimensions: Personal burnout, work-related burnout, and client

related burnout. The three separate parts of the questionnaire were designed to be applied in different domains.

Depressive symptoms

Depressive symptoms were measured by the short version of CES-D (Radloff, 1977). This instrument contains 10 questions about the 7-day incidence of different types of depressive symptoms.

Psychosocial factors at work

Information on psychosocial work factors (job stress) was obtained from standardized questionnare -Effort- Reward Imbalance model. This questionnare was translated into Mongolian and used in the study among Mongolian civil servants in 2006.

Other variables

We included age, marital status, household income, housing and percieved income as socio-demographic and economic variables.

Job characteristics

Job characteristics included profession, specialization, working experience, number of patients and extra work. Specialization was defined as 5 types: pediatrics, internal medicine, surgery, gyneacology and anesthesiology.

Stressful life event

We adjusted an experience of stressful event within last 12 months as a confounder.

3.2. INTERVENTION STUDY

Does online counseling help the helping professionals?

Design and Procedure

The study was a randomized controlled trial and was designed to assess the efficacy of intervention (Scott & Sensky, 2003), i.e. to assess the potential benefit of the intervention through synchronous chat based online counseling in comparison to that of face to face counseling group. Participants who fulfilled the inclusion criteria and scored 10 above on the CESD scale (Radloff, 1977), 50 above on personal burnout scale entered the study (Kristensen, 2005) and then we added STAI scale (Spielberger, 1983) in the assessment form. The inclusion criteria were profession to be doctor and nurse and to have at least one of the conditions such as

depression, burnout and anxiety (see Annex B for full report). In order to make available intra-observer reliability a psychologist who counseled through online must shift with a psychologist who counseled face to face psychological counseling.

Randomization was performed in blocks of 3. Data were collected on 2 occasions, at the start and at the end of intervention period. The Board of Bioethics Committee in Ministry of Health approved the study protocol.

Participants

Recruitment started from March till May 2010 from 4 secondary level hospitals and 5 clinical hospitals in Ulaanbaatar. Based on the screening questionnaire we invited 212 potential candidates to the intervention. Thus participants who fulfilled the inclusion criteria and scored the threshold on the scales were used entered the study. We also sought voluntary participation during the meetings held at hospitals recruited in the baseline survey. As a result, there were 2 voluntary participants showed interest in the trial. After screening for eligibility, they continued to participate.

After offering the intervention, total of 67 people were unable to participate in the intervention because of different reasons. There were 26 people immediately refused, 12 people said that they are too busy to devote time for participation, 3 people were off work for certain period of time, 2 people were fired from work and 21 people never responded. Thus overall 145 eligible participants remained in the randomization. Because of ethical reason for control group, we organized psychological training as a minimum standard care in this trial.

Participants were assigned into 3 groups, 2 interventions and 1 no intervention group and were planned to receive face to face counseling or online counseling and/or no intervention at all. Overall 49 participants were assigned in online counseling group, 48 in face to face counseling and 48 in control group.

IV. PROJECT ACTIVITIES

4.1 Management of the project

The project launched from January 2009 till December 2010. Team members comprised of primary and temporary members who were on short term basis. Official meetings for project members held once in a month, but for important occasions the team gathered intense. After each

meeting, minutes were distributed to members and were given specific tasks. The detailed activities and timeline can be found in Annex C.

Table 1. An example of planned meeting for project members.

Date	Purpose	Decision	Indicator
2010.03.18	1. to introduce the project activity process to the project coordinators,	-To focus more on the qualitative indicators of research findings and hence mention it on the quarterly report,	-quarter report
	2. to implement the intervention based on the randomization,	-to follow the participants and ask for consent in the intervention. -to open a case for each participant.	- # of people signed on the consent.
2010.04.23	1.to raise the participation rate,	-to organize a meeting with hospital authorities from II level at Health Department of the City also with III level with the support from Ministry of Health in order to have permission to organize the meeting in each hospital. -to focus more on the participants with multiple psycho-social concerns at workplace (not only with 1 indicator) in order to have informed consent,	-# of hospitals allowed to present the baseline survey and intervention. - Official permission letters
	2.to study the low participation rate,	-to conduct follow up interview from those who refused to participate,	Follow up interview
	3.to disseminate the baseline survey result,	-to organize a meeting and make a presentation about baseline survey result as well as intervention in each hospital.	- minute
2010.05.13	to expand the sample size by adding the voluntary participants,	-to assess the voluntary participants aroused from the promotion meetings held at hospitals,	- New coding for voluntary participants who are eligible for intervention.

4.2 Computer mediated counseling

Providing psychology therapy, the cognitive behavioral, based on computer through synchronous chat was brand new initiative in Mongolia. Although there were services which offer online format, the basic idea is to use it as discussion forum and comment sharing and it was less likely that specialized professionals are involved in those. Before launching the portal site, we conducted pilot search for psychological online service, special attention was given to the service types, formats, and the audience. (i.e. http://www.psychologies.ru/, http://www.asktheinternettherapist.com/)

Followings were the major challenges in conducting counseling online:

- Being late for the online counseling set time because of heavy workload, forgetting the set time, and lack of knowledge about accessing.

- Sudden disconnection, electricity breakdown, and health problem such as difficulty of being in front of computer for long duration.

- Postponing the appointment time.

- Low rate of participation

For these challenges, we came up with following solutions which were quite successful.

- Every week or before the counseling appointment, reminder calls were organized to the participants. And the counseling time was set according to participants' available time. At the same time, the right to leave the trial was also reminded.

- Also open discussion among doctors and nurses from the recruited hospitals under the topic of job stress and negative psycho-social work environment was organized. At the end of the discussion, few potential participants showed an interest in online type of counseling.

Upon the completion, following lessons were learnt:

1. Before launching the program, we developed process variables which are essential in determining the effectiveness of the intervention. Hence we chose variables such as change of conflict, self determination, the change/dynamics in family and colleague relationship and stability of behavior. All these were to be assessed during the intervention implementation. But during the process it was not feasible to complete all these assessment questionnaires as well as other questionnaires including pre and post assessment, client satisfaction questionnaire. It was too tiring for the client in such as short period of time where each session lasted 77 minutes at maximum. Therefore it is best to choose the most appropriate variables as to show the process effectiveness.

2. The present research had been refined several times by foreign professors (State University of New York, Albany & Yonsei University) to meet the qualification. It was trial rather than activity which required a lot of work in research methodology. On the other hand, it was pretty much dependent on information and technology aspect. Therefore to have thorough supervision and combined skills of researches as well as ICT are essential for thorough protocol of research project.

3. Appropriate allocation of human resource should be considered. Knowing that psychological intervention consumes more time for preparation than its actual

implementation, more relevant professionals to psychology, especially that of ICT are needed. A systematic training and supervision in the field of ICT mediated psycho-social services should be provided.

4. During the data collection of baseline survey, we distributed user card that allows them to access the portal site (setgel.mn) with their chosen ID and password on it. Part of this card with same information was given to the researcher. This was done in order to promote the project activity, to raise the participation as well as to distinguish the target group (doctors and nurses) than other regular visitors. We realized that variety of promotion activities that are secure and confidential should be accompanied.

One of the potential factors for successful implementation of this kind of service was to develop secure and contemporary portal site development.

4.3 Development of "setgel.mn" portal site

We have carried out design of our portal site, which is based on pilot search of international psychological counseling sites, especially the sites dedicated for clinic and their professionalism as well as detailed study on interface, design and content of the sites. Interface, design and content of the international psychology sites for clinic professionalism are focused on the portal site by discussed with web master. In creating color accordance of the portal site, we studied color psychology and chose four colors such as yellow, green, white and bright blue, which have positive effect on human psychology, especially be convenient to doctors and clinic professionalism. The colors have own characteristic and properties, respectively. For instance, yellow color is increased human listening, attention and satisfaction as well as many countries use as symbol of success and happiness. Green is live nature and health's symbol and the color makes a calm environment. Blue color is a symbol of power and sky. White color appreciated with all colors and positively effects on human psychology. In access the colors to the portal site; we have placed the colors by distinct to bright contrast.

The portal site was launched on 1st of August, 2009. The purpose of this site was to help health professionals to effectively improve their psychology education by having appropriate source of knowledge and skill to cope with conditions which might be consequences of professional and work commitment.

Since 1 March till December 2010, there were total of 12,918 visits, 126,564 pageviews with 9.80 visits each, 1.17% of bounce rate, and 65.82% of new visits. The average time spent on was 5 minutes 37 seconds. (see Annex D for detail)

Table 2. The main modules of the portal site

Main menu	Feature	Main data sources
Home page	The page is made in dynamic format for clear visibility to the site users. It allows users to browse through latest news easily.	
Registration	The page allows users to register as members to the site. Person who wants to be member needs to fill some fields.	
Members	The registered members of the site are listed on the page. This was done by the cards which were given during the baseline survey data collection. The site users visit as an individual, nurse or doctor with different rights. Getting information depends on the right category from the portal site is mutually different. The site is made available for users create a password for their profiles.	
Psychology test	The psychology test consisted number of tests divided in sub categories. It is made uncomplicated to use for users.	• Test fund of "Setgeliin Toli" Psychological Center • P.Uvsh. Communication Psychology, Test, Testing, Recommendation, Exercises. UB. 1996.
Vocabulary and glossary	Psychological terminologies are clearly defined.	• Materials of "Setgeliin Toli" Psychological Center • B.Tuya. Individual Psychology. UB. 2003. L.Urantsetseg. Communication Psychology. UB. 2003.
E-training	An online-training is the differentiation from other websites. Every month new lessons were added and were only for our users such as: doctors and nurses, but not for other users and visitors. Those placed lessons for E-training as possible to show by slide. It was designed same as PowerPoint program and designed it using JavaScript and it is easy to download slide pictures. Also it is simple to use.	• Н.Нарантуяа "Хүнийг таньж зөв сайхан харилцах эв дүй", 1995 он. • Сэтгэлийн толь төв."Харилцааны ёс зүй ба стресс менежмент", Улаанбаатар, 2007 он. • Г.Селье. "Стресс", Улаанбаатар,1991 он. • Джерольд Гринберг."Управление стрессом" Москва питер" 2004 • Сборник "Стресс жизни", 1994 он. • Т.Кокс. "Стресс", 1981 он. • Юрий Щербатых. Психология Стресса, Москва Эксмо. 2005. • П.Увш, Б.Хэрлэн Байгууллагын зан үйл. Улаанбаатар 2004 он. • Большой энциклопедический словарь. • Джуэлл Л. Индустриально-организационная психология. Учебник для вузов – СПб.: Питер, 2001. • Карташова Л.В., Никонова Т.В., Соломанидина Т.О. Поведение в организации: Учебник. – М.:

		ИНФРА-М, 1999.
		• Лютенс Ф. Организационное поведение: Пер. с англ. 7-го изд. – М.: ИНФРА-М, 1999.
		• Селье Г. Стресс без дистресса. М., Прогресс, 1979.
		• Хмелевский Ю.В.. Стресс и депрессия – две стороны одного процесса.
Setting an appointment for counseling	Under doctor and nurse right category users are considered as "psychologist zone". The part has been made using Multiple module smile chat program and is made confidential and invisible to other visitors. In addition, duration of chatted time and chat can be archived. Furthermore, chat can be deleted.	
Calendar	Person who wants to get counseling from psychologist is able to schedule an appointment for chat date and time of the week. It is programmed simple to use and make sure not to double the time of an appointment	
Guest book	The part is made to collect users' and visitors' opinion and suggestion about our portal site. This part made probable to select and enter the color, font and the size of the format.	
Relaxation	This section shows simple images with very interesting and amusing effects so it is enjoyable for the users. This section was created using Java Applet so the browsing computer must have the suitable software installed on. If it is not installed a download link will appear automatically. Once its installed the slide show will run without any problem.	
For your health	Advice on health issues are displayed here. Users may leave comments after reading advises below.	• http://www.health.ru/ • http://www.health.com/ • http://www.psychologies.ru/
Psychology world	News and reports on psychology are stored in this part. Users may leave comments after reading advises below.	• http://uugantsetseg.blog.banjig.net/ • http://www.psychologies.ru/ • http://www.stress.ru/ • http://www.no-stress.ru/ • http://www.psychology.net.ru/top/ • http://controllingstress.com/
Music	In this part music accessible for users' free time and included greatest selections of song. Download is available.	• G. Purevdavaa. Webmaster
Photo Album	Relaxing pictures that included following types of photo albums: 1. Flower world 2. Rain 3. Sea 4. Sky 5. Wildlife pictures	• http://www.google.mn/ • http://www.allposters.com/
Games	Puzzle games were provided.	
Discussion	Web members create a discussion and exchange information	
Chat	Window for customers, who take time from psychologists directly connect with the psychologists	
Contact us	This part is made in static format. Contact information of webmaster and related contacts are displayed in it.	Phone, address and location map of "Setgeliin Toli" Psychological Center Health Sciences University

Questionnaire	Study on psychology and information is wanted by guests and customers of the site	Creative work of "Setgeliin Toli" Psychological Center
Statistic	Information of the users, articles have been extracted and developed through Google Analytic and statistics page of our portal site. This software has many advantages. These indexes were calculated for the all season. But we placed it on the portal site since 2 months after made the portal site.	

There were hundreds of spam comments entered since the launching of our website. To prevent these spam comments we installed the CAPTCHA. CAPTCHA is a program that can tell whether its user is a human or a computer. User could see colorful images with distorted text at the bottom of Guestbook form. CAPTCHAs are used by many websites to prevent abuse from "bots," or automated programs usually written to generate spam. No computer program can read distorted text as well as humans can, so bots cannot navigate sites protected by CAPTCHAs. Therefore, prevention of any spams should be considered beforehand.

4.4 Face to face counseling

Unlike online counseling, the participants received FtF counseling in a professional setting where both counselor and the clients' presence were required. It is rather the typical format of any kind of therapy in psychology. Cognitive –behavioral therapeutic approach was served for both online and face to face counseling. In order to change the behavior that is derived from negative sustained thoughts, this therapy accompanies 8 stages to achieve the goal. (see Annex B for detail). The major challenges to conduct this type of counseling were:

o Being late for the set appointment because of external factors such as traffic jam, forgetting the set time and heavy workload.

o Postponing the appointment time.

The project team therefore conducted in- service –counseling. As a result, participants no longer postpone or come late for the counseling.

During the counseling for both type, the psychologists observed that the relationship between the colleagues seem to be an important factor for any work related problems such as burnout and job stress. Therefore, group counseling based on cognitive-behavioral approach started to be conducted.

1. The first group counseling was organized on 2$^{\text{nd}}$ of August and 18 people participated. Another request to conduct group counseling was expressed from one of the departments. The first session was on 30$^{\text{th}}$ of August. From this group, 2 potential participants showed an interest in intervention.

2. The group counseling showed up to be effective by change in attitude towards the colleague relationship.

4.5 E-Health course modules

As the main feature of the project was to introduce new type of intervention that addresses commonly occurred psychological condition of health professional, we developed self learning course module that addresses issues of job stress and burnout in HTML format (See Annex E). Also self relieving methods were included. Overall 200 CDs were developed and were distributed to Human Resource Department and Education and Research Department of each 9 hospitals which involved in our research project. This training curriculum consisted of 12 topics which covers the issue of job stress, burnout and its leading causes.

- Training

As part of research activities, research team organized psychology training for eligible participants for the intervention study. Thus overall 145 doctors and nurses, divided into 3 groups, from National Centre for Maternal and Child, The Clinical Hospital #1, Chingeltei district hospital, and Maternity clinic #1. The training took place in 3 hospitals hall rooms. Each group received 3 sessions of training lasting for 45 minutes. The e health course module served as the main curriculum of this training.

4.6 Promotional activities

Dissemination meetings

There were 10 hospitals recruited in the baseline study. The main findings were introduced to directors, administrative and human resource staff as well as to the doctors and nurses. Total of 10 meetings were held in addition we organized dissemination meeting at City Health Department for all the directors of district general hospitals in Ulaanbaatar city.

Brochures

Total of 1000 brochures which included information about project activity and portal site were distributed to the main recruiting hospitals (4 specialized clinical hospitals and 4 district hospitals) and staff as well as during the National Seminar 1 organized by Datacom LLC (Annex F).

Counseling manual

The main theoretical approach of providing the psychological intervention was online and face to face counseling was cognitive behavioral therapy. Manual which explained practical implication about the main stages of this therapy was published and was distributed to counseling practitioners and faculties who involve in academic trainings. (Annex G)

Online banners

The portal site banner and advertisement was developed and were located on the other advertisement portal sites. In the result, it became possible to attract user of other sites to our site. It was located on the DreamIt project site www.dreamit.mn and on the advertisement site www.zar.mn, and www.103.mn as well as on the website of "Mongol Urkh" psychology therapy centre (www.mupa.mn). Also page was created for setgel.mn on facebook.com.

Final workshop

On 8th of December, 2010 final report dissemination workshop was organized in the conference hall of Puma Hotel in Ulaanbaatar (Annex H). In the workshop, 39 participants from

- Representatives of Health Policy and Health Promotion in Ministry of Health
- Directors, Human Resource Managers of secondary and tertiary level clinical hospitals psychologists, university faculties in the field of psychology.
- ICT professionals from clinical hospitals and Ministry of Health
- Representatives from the School of Public Health

4.7 Academic activities (Annex I)

Conference proceedings

1. Ariunsanaa B, Sugarmaa M, Saranchuluun O, Huderchuluun N, Khandsuren Kh, Enkhjargal Ts, Purevdavaa G. Does online counseling help the helping professionals?. Conference proceedings of Med-E-Tel The International eHealth, Telemedicine, and Health ICT Forum for education, networking and business. 6-8 Apr. 2011. p-97. http://www.medetel.eu/index.php?rub=educational_program&page=program

2. Sugarmaa M., Ariunsanaa B., Saranchuluun O., Khuderchuluun., Lkhagvasuren Ts. Psychosocial work stress is as predictor of well being: A cross-sectional study among Mongolian health professionals using ERI model. Conference proceedings of Asian Congress of Psychosomatic Medicine. 2010. Beijing. p.45

3. Otgon, S., Bagaajav, A., Myagmarjav, M., Nanjid, Kh., & Gombo, D. Burnout and depression among doctors and nurses in Ulaanbaatar, Mongolia. A poster presentation. Social justice: APHA 138th annual meeting. Denver, USA. Nov, 6-11. 2010

4. Ariunsanaa B, Sugarmaa M, Saranchuluun O. Job stress and burnout, related factors. Symposium proceedings of 85th Anniversary of First Clinical Hospital. p-49

5. Ariunsanaa B, Sugarmaa M, Khuderchuluun N, Saranchuluun O. Burnout and its associated factors among doctors and nurses of Ulaanbaatar. Conference proceedings of Annual Scientific Symposium "Erdmiin Chuulgan" of Health Sciences University. Apr, 2010. p-12 (in Mongolian). Awarded as the Best research.

6. Ariunsanaa B, Khuderchuluun N. Job stress, burnout and job satisfaction: A study among doctors and nurses of Ulaanbaatar, Mongolia. Mongolian and Korean fellowship program. Health promotion institute. Yonsei University, South Korea. Feb 04. 2010

Paper

1. Ariunsanaa B, Sugarmaa M, Khuderchuluun N, Saranchuluun O, Khandsuren Kh, Enkhjargal Ts, Purevdavaa G. Does online counseling help the helping professional? Randomized controlled trial of effectiveness of online and face to face counseling intervention. Global Telemedicine and eHealth updates. 4, 221-225. ISSN-1998-5509

2. Ariunsanaa B, Sugarmaa M, Khuderchuluun N, Saranchuluun O, Chae, Y.M. Burnout and job stress among Mongolian doctors and nurses. Under peer review of Journal Industrial Health. ISSN: 00198366

3. Ariunsanaa B, Sugarmaa M, Khuderchuluun N, Saranchuluun O. Burnout and its associated factors of doctors and nurses of Ulaanbaatar. Under peer review of Mongolian Medicine Journal. (in Mongolian).

V. PROJECT OUTPUTS

#	List	Specific achievement
1	Baseline survey report "Job stress, burnout and depression among doctors and nurses of Ulaanbaatar" (Annex A)	These issues had been paid little attention and available reviews were scarce. The result was introduced to public, academics and practitioners through various sources of information. Implementing institution was recognized to certain extent in this area of research. Research skills were enhanced at individual level during the project implementation.
2	Intervention study report "Does online counseling help the helping professionals?" (Annex B)	Randomized controlled trial is rarely conducted in the field of health and public health. This was our first attempt to conduct the trial in a qualified level applying cognitive-behavioral therapy approach. Initiative in service delivery and service quality are in greater need to be proven based on evidence. Through conducting the study it was learned capacity for this type of research is essential
3	Policy brief (Annex J)	The development of the policy brief is about maintaining the project output and what is explored in the area of subject studied. In the development process decision makers, hospital administrative staff, and practitioners were involved and gave the comments of its feasibility.
4	Portal site including E health course module (Annex D)	This portal site was especially dedicated for health professionals to deal with their workload.
5	User training CD (Annex E)	Self learning course modules which is transformed into HTML format. User can easily learn the topics without traditional way of learning.
6	Promotional brochure (Annex F)	2 brochures were developed. One was about project and the other was about portal site setgel.mn. They were distributed to the hospital staff and practitioners.
7	Final workshop (Annex H)	Overall research result and what was achieved trough implementing the project was introduced by organizing final report. Overall 39 representatives from health sector were involved. (Annex E)
8	Media information (Annex H)	The project information and result was also

		publicized through some of the main portal sites and TV news.
9	Online patient treatment manual in Mongolian (Annex G)	Practical implication of applying cognitive behavioral therapy was published. It is especially dedicated for those who are interested in conducting the therapy.
10	Sub project web space on umbrella portal website (Annex K)	Information and news update related to sub project 1 was publicized in an umbrella project web space.
11	Conference participation report (Annex L) along with presentation and paper	The project result was introduced at the International eHealth, Telemedicine and Health ICT Forum for education, networking and business held in Luxemburg. Also the paper was published in the conference journal which has ISSN.

VI. PROJECT OUTCOMES

- Certain professionals, 145 in total, benefited from the project by solving their conditions which had adverse effect on their work performance and relationship with colleague and with clients.

- This project contributed to recognition of serious situation which is faced by health professionals. By conducting broad survey to what extent doctors and nurses encounter job stress and how it is linked with possible consequences was an important knowledge generation in the field of public health and medical sociology. As a result of much academic activities at the international as well as national level, the project was appreciated from the experts.

- Innovative aspect of the project was helpful in finding solution to existing problems by and recommending possible intervention. By testing its feasibility for the first time, much information and knowledge generated towards practical implication which is helpful for practitioners and faculties in the field of psychology.

- Practical implication of new service. Based on project output, online counseling is starting to be applied in practice. Our collaborating institution, Setgeliin Toli, is in the preparation stage for providing online counseling.

- Sustainable research team had established. During the implementation, research members are trained in 7 trainings which were organized from umbrella project. Also during each stage of research conducting, members were much advanced the related field.

VII. OVERALL ASSESSMENT AND RECOMMENDATION

Based on the result, outputs and outcomes, research team assessed the project activity was successfully implemented and following criterion were applied in the assessment.

1. The methodology and methods were developed in a qualified level. Massive literature review was conducted in order to meet the requirement of quality. As a result, the project team members successfully participated in academic symposium and activities.

2. The project staff was well trained and well organized which was leading factor for successful implementation.

Upon the completion of the intervention study, the researchers what were the pros and cons of the entire intervention. And also tried to answer the question of why lower retention rate than we expected.

- Any social intervention type such as social work counseling and psychological counseling are newly developing field of service in Mongolia. Though educational capacity is settled to some extent, the practical implication, professionalism, and significance awareness are underway. For instance, there are total of 10 psychological institutions officially registered nationally but 6 of them offer professional counseling on a regular basis. Besides, students in this field are educated in 8 state and private universities at undergraduate level. Therefore, during the implementation, we felt the understanding process of both type interventions needs gradual improvement and complex effort.

- Medical professionals, especially physicians have high self efficacy and self confidence which results them think that they don't need any professional help. This might have influenced the participation in intervention. But indeed massive researchers studied the specific risk factors and disease patterns related to occupational hazard of this particular professional group.

- It is said that almost every hospitals is equipped with computer and internet, the access and the skills of usage in Mongolia. For example, during one of the project promotion meeting held at one of the hospitals, almost 90% of doctors

and nurses have their own computer, but only 30% of them connected to internet. They also admitted that computers are used only for typing. This under usage of internet was explained by affordability. This condition may have blocked the possibility to get provided by online counseling at work place.

- Reaching every potential participants of intervention was challenging because of the unstable situation and style of health care sector management. Hospital authority and administration tend to be reluctant to offer additional services which might help to address their psychological needs and in fact contribute to positive impact of service quality.

- Unexpected internal and external factors influenced more successful conducting of intervention. For instance, the outbreak of H1N1 caused heavy workload and additional tasks for the participant doctors and nurses. Because of the infant mortalities, the hospital changed the location which caused complete renewal.

Recommendation

1. In order to maintain the project outcome, much effort needs to be done at policy level to maintain the capacity such as high speed internet and personal computers should be installed at hospitals on which the online counseling service is highly dependent.

2. Computer literacy of hospital staff need to be improved. Vast training and computer usage should be promoted, especially for senior staff.

3. The application of online counseling should be maintained by providing methodological training and study tour.

4. This brand new practice of computer mediated professional help can be exercised in other field where majority of workload is performed by human service workers, i.e judges, prison guards.

5. The study also showed effectiveness in providing the online psychology services along with group counseling until there would be no dependence on external factors such as high speed internet, high computer literacy skills and institutional support.

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IX.PHOTO SESSION

Psychology training

Meeting held at City Health
Department. March, 2010

During one of the training organized
by Datacom

Discussion with visiting professor
about the study protocol

Minimum standard care, a psychology
training

Minimum standard care, a psychology
training

Final workshop

Project members,
Final workshop