



The future is here and now

Development of the refugee-bot: assisting refugees with practical health issues using artificial intelligence

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Background

- Europe has experienced a record number of asylum seekers and refugees in the last years, and over 10000 refugees from Syria have arrived in Norway (Statistics Norway, 1. January 2016,).
- This population is often highly traumatized by both war-experiences, loss of their home and the migration experience.
- Many suffer from post-traumatic reactions or stress disorders that also influence the ability to function both at work and at home (Fazel, Wheeler, & Danesh, 2005; Rousseau, Pottie, Thombs, Munoz, & Jurcik, 2011).
- The Norwegian Department of Health has assessed the treatment offered to asylum seekers and refugees with traumatic disorders throughout Norway (Rambøll 2016). Out of 67 mental health clinics only 18 % of adult services had special competence in treating this group specifically, while absolutely **none of the services for children reported refugee specific competence.**

Bridging the gap

With artificial intelligent chatbots

Refugees have:

- More trauma & mental disorders
- More use of primary health services
- More psychotropic medication
- Less specialized mental health treatment
- Report therapy as being less beneficial or having negative consequences

Early intervention

Services in mother tongue

Support on demand

Include information on Norwegian understanding of mental health and treatment services

Treatment challenges:

- Language barriers
- Low quality and expensive translation services
- Unstable life situation
- Cultural differences in mental health literacy.
- Weak cross-cultural competence in health services

Objective

The overall objective of this project is to develop more efficient methods for information acquisition and mental health services for newly arrived refugee youth in their own language through smart use of automated services such as chatbot's.

The idea is to develop a chatbot that

1. Provides personalized and relevant information about the Norwegian health care system to newly arrived refugee youth in their native tongue
2. Enhances mental health literacy
3. Provides psychological coping mechanisms in times of need
4. Strengthen coordination and collaboration between health care services at schools, health care specialists (e.g. doctors) and online information providers?

Expansion

- Could this type of technology also be used to provide information in many other areas such as:
 - Immigration application process?
 - Information about Norwegian public welfare services?
 - Organization of services?
 - Etc....

Example «Karim»

- Karim is a mental health “chatbot” that can monitor the user and cater to their emotional signals when needed.
- The program provides psycho-education and support at the precise moment that person requires it and is thus person-centered and readily available.

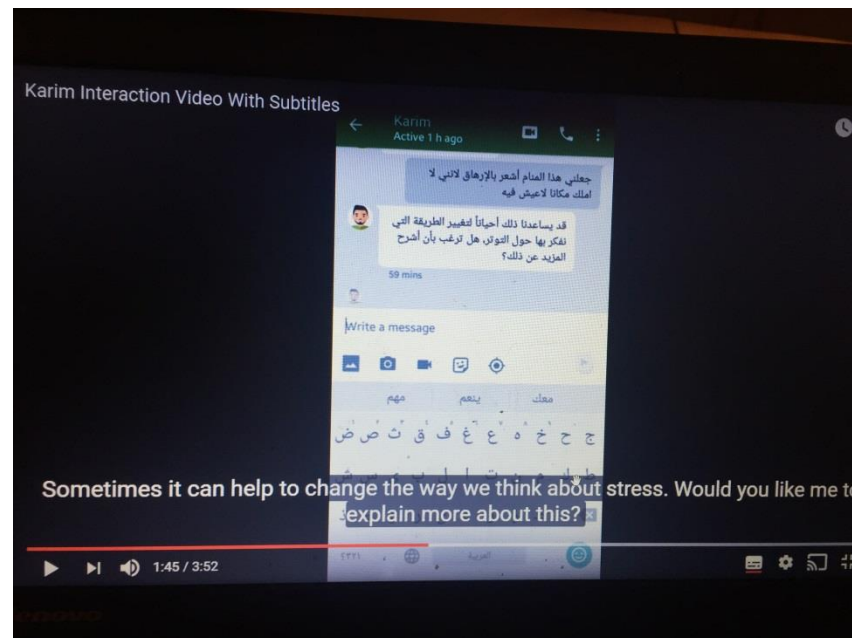


“Karim” is developed by the San Francisco based company X²AI. The program is a psychological AI that administers highly personalized psychotherapy, psycho-education, and health-related reminders, on-demand, to the user at their location.

<https://x2.ai/>

Karim

- **Conversational** interaction via existing communication channels, such as SMS, Facebook Messenger, Web Browsers, and several other platforms.
- Low threshold early intervention service.
- Introduces coping mechanisms based on CBT techniques.



<https://youtu.be/c3AgGSsAPkM>

Impact

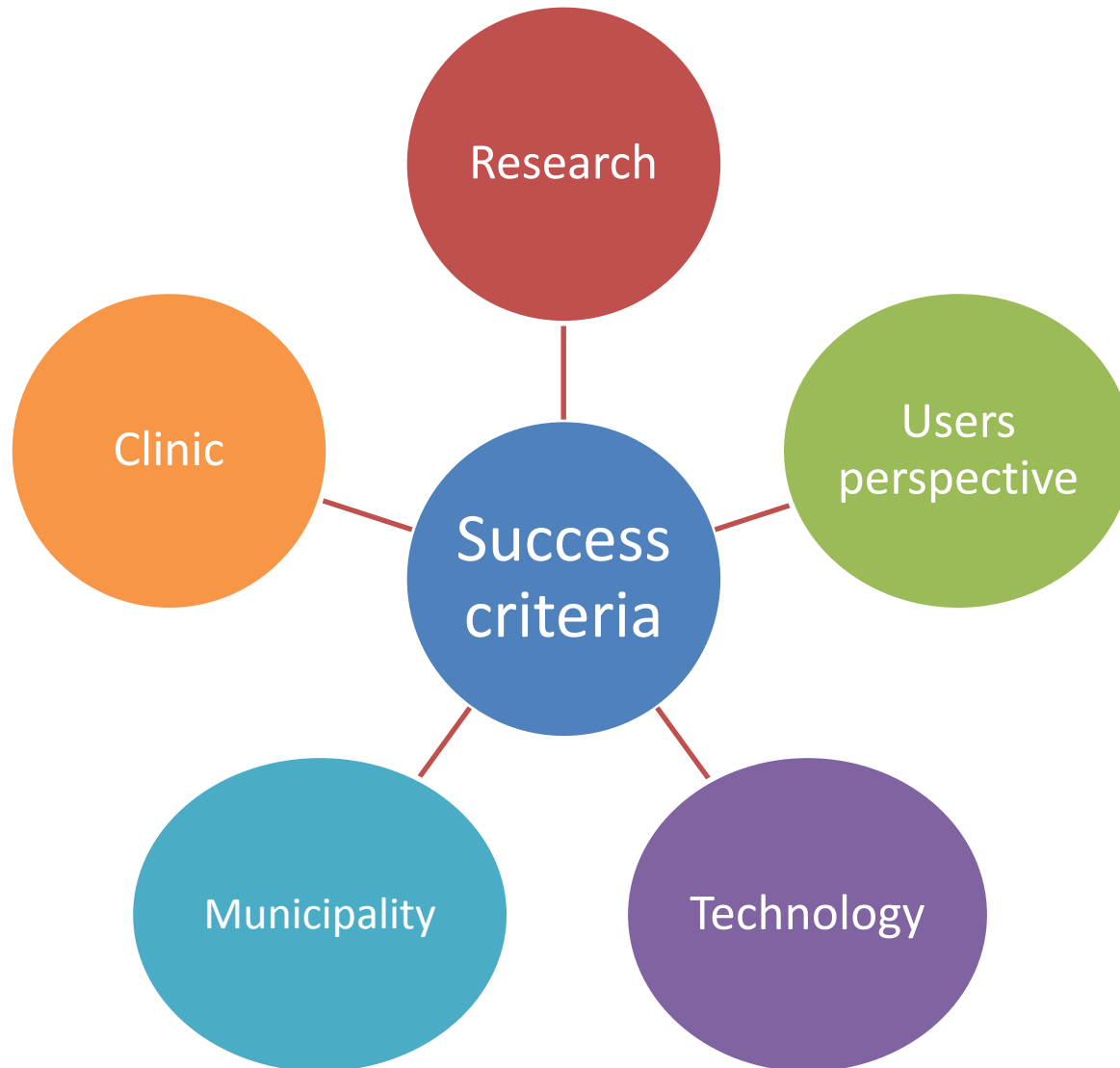
Reason for immigration				
		Percent change	Percent change	Since 1990
	2016	2015 - 2016	2006 - 2016	Total
Total	50490	2,3	70,4	788531
Work	14372	-20,6	22	262669
Family	16465	-1,5	45,1	283478
Refugee	15190	63,7	380,8	156590
Education	4147	-16,41	28,1	80956
Other	308	22,7	180	4079
Unknown	8.	.	.	759

Statistics Norway:

Importence to society

- Person centered early intervention is important for general function
- Enhance integration
- Cost efficient
 - Translation costs
 - 490 million NOK in public services in 2013
 - Increased to 740 million NOK in 2015
 - 44.8 million NOK in health services in 2012
 - <https://www.regjeringen.no/no/dokumenter/NOU-2014-8/id2001246/sec19#KAP18-1>
 - <https://www.regjeringen.no/no/dokumenter/NOU-2014-8/id2001246/sec5#KAP4-3>

Collaboration



Collaboration



Success criteria



Success
criteria

- Provide early intervention as to:
 - Ease contact with health services for refugee youth
 - Integrate psychological coping mechanisms leading to less stress related symptoms
 - Increase general function
 - Less referrals to specialized health services

Research

Research

- Qualitative experience of mental health chat bot in refugee groups?
- Quantative research on application, symptom reduction, increased function in user and services? RCT?
- Quantative research on application for service providers?
- Pilot intervention study vs. treatment as usual?



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Thank you for your attention!

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