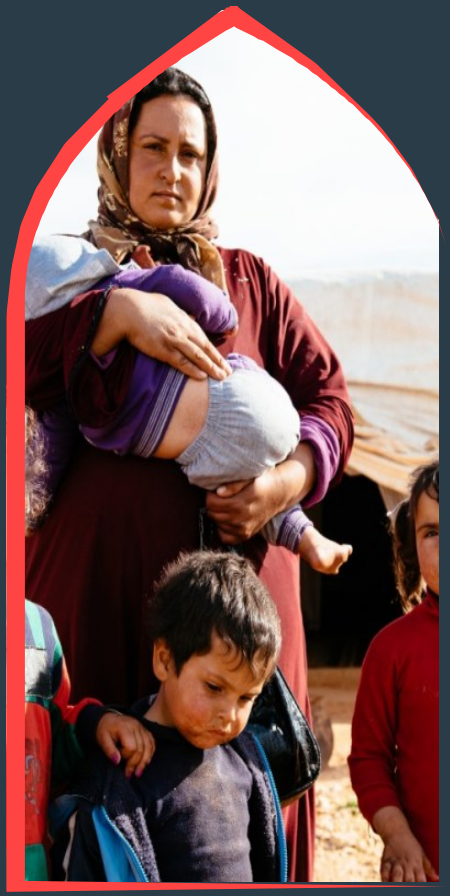

eSahha project

Towards Gender Equitable Access to Health Services in Rural and Refugee Settings:

Lessons Learnt from the First mhealth Project in Lebanon

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International Development Research Centre
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Palestinian Refugees in Lebanon

≃ **450,000**
Registered **Palestinian Refugees in Lebanon**

≃ **11%** of Lebanese population

≃ **51%**
Are **WOMEN**

Mostly hosted by **the poorest communities in Lebanon**

Rural Population in Lebanon

≃ **480,000**
Lebanese Individuals living in **Rural Areas in Lebanon**

≃ **12%** of Lebanese population

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Gender Lens

Lebanon

rank
out of 144 countries
137

score
0.00 = imparity
1.00 = parity
0.596

- Lebanon ranks **third to last** in the Middle East and North Africa (MENA) region
- **Education:** Public education as only choice for girls in poor families, especially in rural areas[1]
- **Health:** Most affected are Women especially in rural areas[1]

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1. Avis, W. (2017). "Gender equality and women's empowerment in Lebanon."

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Prevalence of NCDs

≃ **85%** Of total death in Lebanon

- Evidence-based national guidelines for the management of major NCDs available

  BUT NCD surveillance and monitoring system absent

- **AT HIGHER RISK!**

  Underprivileged populations residing in rural areas and refugee camps

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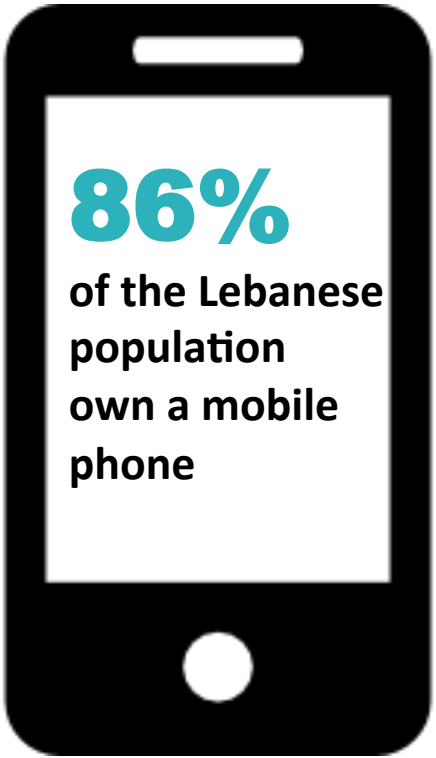
Ownership of mobile phones in Lebanon



69%

of those aged above 30 own a smartphone

89%

Use mobile phones to send and receive text messages

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eSahha Project (2013-2017)

AIM

To enhance equity in access to quality primary health care services in Lebanon through the employment of low-cost mHealth approach targeting individuals suffering from chronic diseases, specifically diabetes and hypertension, with a focus on pregnant women

SETTING

16 PHCs | 8 Intervention / 8 control

TARGET POPULATION

≥ 40 years

≥ 20 weeks of pregnancy

Physicians and nurses Practicing in PHC centers

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Components of the eSahha Intervention

1 COMMUNITY-BASED INTERVENTION

COMMUNITY SCREENING

- Using a purposefully-designed 'chronic illnesses screening kit'
- Screening results were remotely entered on a netbook application

DISEASE AWARNESS

Brief on-the-spot disease self-management education (DSME) provided by health professionals to patients on their respective chronic conditions

2 PHC CENTER-BASED INTERVENTION

SHORT MESSAGE SERVICE (SMS)

Sending weekly medical information about diabetes and hypertension, as well as Targeted SMSs for reminders of appointments and regular physician follow-up

ONLINE SCHEDULING SYSTEM

Appointments were scheduled remotely and during the visit through a specifically designed netbook application linked with the PHC centers of the corresponding area

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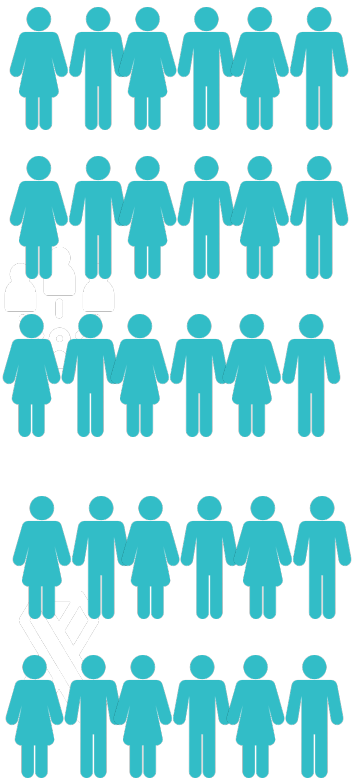
Results of Community Screening



3481 Screened Individuals

2588 individuals from 5 rural areas

900 Palestinian Refugees from 3 refugee camps

278 Generated referrals to nearest PHC for follow up

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Results of Community Screening

	N	%
Total number of screened individuals	3481	100.00
Gender		
Male	1345	38.64
Female	2136	61.36
Age Groups		
40-49	1178	33.84
50-65	1347	38.70
>65	956	27.46
Marital Status		
Single	302	8.67
Married	2721	78.17
Divorced/Separated/Widowed	458	13.16
Educational Status		
Illiterate	773	22.21
Reads and Writes	422	12.12
High School/Vocational Graduate	2135	61.33
University Degree	151	4.34
Employment Status		
Unemployed	2621	75.29
Employed	860	24.71
Insurance Status		
No Insurance	1800	51.71
Public Insurance	671	19.28
Private Insurance	76	2.18
Others	65	1.87
UNRWA*	869	24.96
Setting		
Rural Area	2588	74.35
Refugee Camp	893	25.65

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Results of Community Screening

	Total	Suspected	Pre-diagnosed
Diabetes Detection Rate (per 1,000 population)	183.56	10.34	173.23
Rural Areas	191.27	11.21	180.06
Refugee Camps	161.25	7.84	153.42
P-value	0.046*	0.391	0.070^^^
Hypertension Detection Rate (per 1,000 population)	355.93	87.33	268.60
Rural Areas	350.46	91.58	258.89
Refugee Camps	371.78	75.03	296.75
P-value	0.233	0.131	0.028*
Diabetes and Hypertension Comorbidity Detection Rate (per 1,000 population)	112.61	2.59	110.03
Rural Areas	117.85	2.70	115.15
Refugee Camps	97.42	2.24	95.19
P-value	0.096	0.813	0.100

* Refers to Statistical Significance at 0.05 CI
^^^ Refers to borderline Significance

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Results of PHC-Based Intervention

	Intervention			Control		
	OR	95% CI	p-value	OR	95% CI	p-value
BP control						
Study Period						
Posttest	1.28	(1.00, 1.64)	0.05*	1.28	(0.95, 1.72)	0.11
Pretest		ref			ref	
Gender						
Females	1.12	(0.88, 1.44)	0.36	0.97	(0.74, 1.29)	0.85
Males		ref			ref	
Age (continuous)	0.99	0.98, 1.00)	0.06	0.99	(0.98, 1.00)	0.03*
Setting						
Rural areas	0.31	(0.24, 0.40)	<0.01*	0.22	(0.15, 0.30)	<0.01*
PalestinianRefugee Camps		ref			ref	
HbA1c poor control						
Study Period						
Posttest	0.62	(0.39, 0.97)	0.04*	0.68	(0.35, 1.33)	0.26
Pretest		ref			ref	
Gender						
Females	0.59	(0.39, 0.89)	0.01*	0.84	(0.47, 1.49)	0.56
Males		ref			ref	
Age (continuous)	0.97	(0.96, 0.99)	<0.01*	0.97	(0.95, 1.00)	0.03*
Setting						
Rural areas	0.71	(0.45, 1.11)	0.13	0.81	(0.43, 1.51)	0.51
PalestinianRefugee Camps		ref			ref	
Annual HbA1c testing						
Study Period						
Posttest	2.52	(1.82, 3.49)	<0.01*	4.26	(2.79, 6.49)	<0.01*
Pretest		ref			ref	
Gender						
Females	1.17	(0.85, 1.61)	0.34	1.04	(0.69, 1.56)	0.87
Males		ref			ref	
Age (continuous)	0.98	(0.97, 0.99)	<0.01*	1.01	(0.99, 1.03)	0.37
Setting						
Rural areas	4.43	(3.20, 6.13)	<0.01*	2.22	(1.46, 3.39)	<0.01*
Palestinian Refugee Camps		ref			ref	

	Intervention N (%)	Control N (%)
Total number of participants*	1433 (100.0)	926 (100.0)
Gender		
Male	353 (43.7)	228 (43.8)
Female	454 (56.3)	292 (56.2)
Age Groups		
40 - 55	252 (31.5)	134 (26.9)
56 - 70	353 (44.1)	200 (40.1)
≥ 71	195 (24.4)	165 (33.1)
Setting		
Rural Areas	888 (62.0)	563 (60.8)
Palestinian Refugee Camps	545 (38.0)	363 (39.2)
Disease Category		
Diabetes	512 (35.7)	300 (32.4)
Hypertension	921 (64.3)	626 (67.6)

*Some numbers under some categories may not add up to the total due to missing values

No significant differences between gender, setting and disease category across the two groups were identified using $\chi 2$ test; the difference in age groups between intervention and control at baseline is statistically significant (p=0.003). Bonferroni post hoc test reveals that the difference is in the age group ≥ 71 years.

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Results of Satisfaction with mHealth intervention

Table 2- Comparison of the demographic characteristics among those who received and read SMS and those who did not receive or did not deliver the SMS to target

	SMS received and read N (%)	SMS not received/not delivered to target N (%)	p-value
Total number of individuals	606 (100.0)	394 (100.0)	
Gender			
Male	290 (47.9)	154 (39.2)	
Female	316 (52.1)	239 (60.8)	0.007*
Age groups			
40-50	191 (32.0)	59 (15.0)	
51-65	288 (47.5)	184 (46.9)	
66-75	84 (13.9)	89 (22.7)	
76 years or more	43 (7.1)	60 (15.3)	<0.001*
Marital status			
Single	27 (4.5)	15 (3.9)	
Married	468 (77.2)	290 (74.6)	
Divorced/Separated	17 (2.8)	6 (1.5)	
Widowed	94 (15.5)	78 (20.1)	0.125
Educational status			
Illiterate	92 (15.2)	122 (32.5)	
Reads and writes	47 (7.8)	64 (17.1)	
Elementary	255 (42.1)	125 (33.3)	
High school	157 (25.9)	48 (12.8)	
University degree	55 (9.1)	16 (4.3)	<0.001*
Employment status			
Unemployed	412 (68.0)	327 (86.3)	
Employed	194 (32.0)	52 (13.7)	<0.001*
Insurance status			
Not insured	258 (42.6)	149 (37.8)	
Insured (Public/Private Insurance, UNRWA, Others)	348 (57.4)	245 (62.2)	0.135
Setting			
Rural area	351 (57.9)	250 (63.5)	
Refugee camp	255 (42.1)	144 (36.5)	0.081
Reason for SMS			
Diabetes	94 (15.5)	57 (14.5)	
Hypertension	338 (55.8)	241 (61.2)	
Both	174 (28.7)	96 (24.4)	0.218

+ 5 FGDs with 39 patients
→ Mainly Women (61.5%)

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Lessons Learnt

- Unable to meet equal gender recruitment in some cases
- Need to adopt gender-sensitive recruitment strategies
- Tailoring interventions based on needs of individuals of different gender, age, education
- Adopt interventions based on needs assessment
- Health branding
- Include Gender in Analysis → A MUST!
- Ensure the engagement of important stakeholders (e.g. MOPH) pre-, during, and post-implementation.
- National Scale-up dependent on political will to use mHealth

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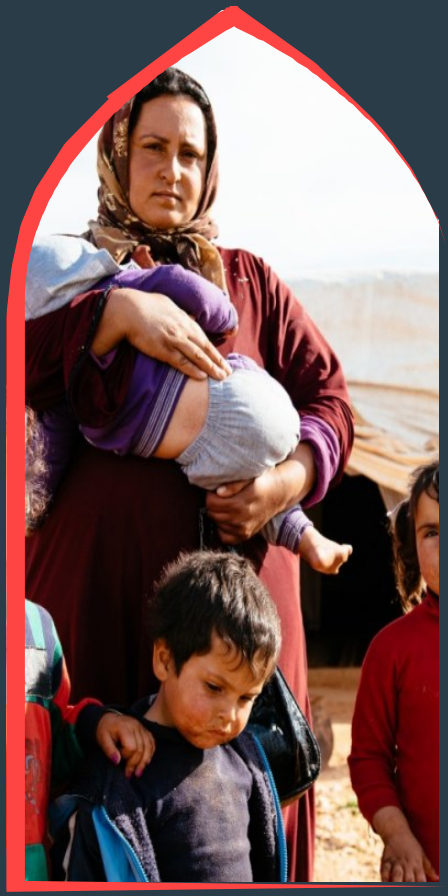

eSahha project

Thank you!

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