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Research Article

Participation in the National Campaign on Viral Hepatitis C and Non-Communicable Diseases among Administrative Workers of Ain Shams University, Egypt

Nashwa I. Basyoni, Nourhan B. Abd-ElSamad, Mohamed F. Allam *, Samia I. El-Damaty

Department of Community, Environmental and Occupational Medicine, Faculty of Medicine, Ain Shams University, Egypt

*Correspondence: Mohamed Farouk Allam (farouk.allam@med.asu.edu.eg)

Abstract: Background: On the first of October 2018, the Egyptian Ministry of Health and Population (MOHP) launched an initiative; named "100 Million Healthy Lives", for nationwide screening of hepatitis c virus (HCV) and non-communicable diseases (NCDs). Egypt has the highest prevalence of HCV infection in the world where about 10% of the Egyptian population is affected by the disease. NCDs are the leading cause of mortality in Egypt and account for about 84% of all deaths. This study was conducted to a) Estimate the prevalence of participation in the national campaign on viral hepatitis C and non-communicable diseases among administrative workers in Ain shams University (ASU), b) Estimate the self-reported satisfaction of these participants with the campaign. **Subjects and Methods:** A cross-sectional study was conducted on 400 administrative workers of ASU faculties between March and August 2019 in Cairo, Egypt. A multistage random sample was done. **Results:** The study showed that 96% of the study group participated in the campaign. "Evaluating health status" was considered the main reason for participation at 92%, followed by "desire to obtain follow-up card", at 36%. Non-participation rate was about 4% and the main cause of non-participation was "fear of needle prick". About 91% of the participants were satisfied with the provided services. Mass media played a major role in awareness about the campaign for 91% of participants. **Conclusions:** The majority of the study group participated and was satisfied with the campaign. Mass media played a major role in participant awareness of the campaign.

Keywords: Hepatitis C Virus, Non-Communicable Diseases, Participation, Satisfaction, Ain Shams University, Egypt

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1. Introduction

The initiative named "100 Million Healthy Lives" was launched from October 2018 to April 2019. This program aimed to eliminate hepatitis c virus (HCV) by 2020 and assess the prevalence of non-communicable diseases (NCDs) in Egypt. It included early detection, referral, and treatment for HCV and NCDs. The screening services were free of charge. The campaign was carried out in three phases that covered 27 governorates. Over 49.8 million people were screened and tested for NCDs and HCV; 2.2 million were referred for polymerase chain reaction (PCR) tests, and about 0.9 million started their first dose of HCV treatment [1].

HCV infection is considered a major public health problem in Egypt and is highly related to liver diseases such as liver fibrosis, cirrhosis, and cancer. Egypt has the highest prevalence rate of HCV infection in the world with about 10% of the Egyptian population [2]. NCDs are considered the leading cause of mortality in Egypt and are estimated to

account for 84% of all deaths [3]. Thus, screening for HCV and NCDs was of high priority and was anticipated to reap benefits for Egyptian citizens in the future.

Nationwide screening in Egypt has been considered the main element for designing eradication campaigns. By 2015, Egypt had already conducted three national surveys: 1996, 2008, and 2015 [4]. Accordingly, these national studies provided an opportunity to estimate HCV incidence and infection burden in Egypt up to 2030 using advanced statistical methods [5]. But a nationwide survey, providing equal opportunities for all citizens to be screened for these major health problems and then providing therapy, had not been carried out before in Egypt, if in any other country.

National campaigns require evaluation. By measuring some variables such as knowledge, attitude, behavior change, and participant satisfaction, we can measure the effectiveness of the campaign in achieving its objectives and assess the success of campaign performance. Thus, the participation of citizens in such a campaign and their satisfaction are important issues worth investigating.

The purpose of the study was to: a) Estimate the prevalence of participation in the national campaign on VHC and NCDs among administrative workers in Ain Shams University, b) Estimate the self-reported satisfaction of these participants with the campaign. Doing so, we hope to provide information which could be used to improve the outcomes of future campaigns and to ultimately improve the health of Egyptian citizens. We also aspire to provide lessons for other countries to benefit from when carrying out similar health campaigns.

2. Subjects and Methods

2.1. Study design, setting, and sample

A cross-sectional study was conducted in the faculties of Ain Shams University in Cairo governorate for six months between March and August 2019 in Cairo, Egypt. It was done on 400 Administrative workers of Ain Shams University faculties (out of a total of 6213 workers) who were present on the day of the interview and were willing to participate in the study. This group was chosen to be studied due to several factors; they belong to the middle class in Egypt, they are well educated, and they contain the age groups that are most likely to be affected by HCV and NCDs or are at risk in the recent future.

Multistage random sampling was done in three stages as follows: In the first stage, ASU faculties were divided into four disciplines; A) Humanities and Social Sciences, B) Natural Sciences, C) Mathematics, Statistics, Computer Science, and Engineering, D) Medicine and Health Sciences [6].

According to the number of workers in each discipline, a proportionate number of the sample was distributed to the discipline.

In the second stage, two faculties were randomly selected from every discipline. The quota for every discipline was divided between the two selected faculties.

In the third stage, participants were enrolled in the study through a convenient sample method in each faculty. As the target population was more or less homogeneous, especially in terms of educational level, social class, and occupation, the convenience sampling method was applied in this stage.

The sample size was calculated according to the results of the participation rate at the end of the 1st phase of the campaign which was 65.5% [7]. Taking into consideration the total number of administrative workers employed in ASU faculties being 6,213, the excepted participation rate being 65.5%, at a level of confidence (1 – Alpha Error): 95%, with an accuracy level 5%, the provisional sample size was calculated to be 331. The final sample size was augmented to 400 administrative workers. The sample size was calculated using "Open Epi, Version 3, open-source calculator".

2.2. Tool

The study data were collected by using a self-administered questionnaire**.** It consisted of the following sections:

- **Section I**: Socio-demographic data of the participants: Age, level of education, marital status, and smoking habits were recorded for each participant.
- **Section II**: Participation and satisfaction towards the national campaign. Participants were asked about their knowledge and source of information about the campaign, participating or not in the campaign, the cause of participation or non-participation, their satisfaction, and factors affecting it.

2.3. Ethical Consideration

1. Approval of Ain Shams Faculty of Medicine Ethical Committee was obtained.
2. Administrative approval was taken from ASU administration and from the faculties included in the study.
3. Informed verbal consent was taken from the participants.

2.4. Statistical Analysis

The collected data were analyzed using the SPSS program (Statistical Package for Social Sciences) Version 24. Regarding descriptive statistics, qualitative data were presented using frequency and percentages. Quantitative data were presented using mean and standard deviation.

3. Results

Characteristics of the study group: About 400 administrative workers of Ain Shams University faculties were enrolled in this study aged between 18 and 60 with a mean age of 44 (+/- 9) years. More than half of the participants were females, about 72% were married, 65.8% had a college degree and the remainder had a high diploma. About (79%) were non-smokers (Table 1).

Table 1. Sociodemographic characteristics of the study group (n = 400, *n=83).

Variable		N	(%)
Age	Mean ± SD = 44± 9		
	Range = 21 – 59		
	<30 years	30	(7.5)
	30-50 years	259	(65.0)
	> 50 years	111	(28.0)
Sex	Male	181	(45.3)
	Female	219	(54.8)
Marital status	Married	289	(72.0)
	Single	57	(14.2)
	Divorced	29	(7.0)
	Widow	25	(6.0)
Educational qualification	College degree	263	(65.8)
	High diploma	137	(34.3)
Smoking status	Non-smoker	317	(79.3)
	Smoker	83	(20.8)
Type of smoking*	Cigarette	70	(84.0)
	Shisha	13	(16.0)
Duration of Smoking*	1-10 years	58	(70.0)
	11-20 years	22	(26.5)
	More than 20 years	3	(3.6)

The majority (98.8%) of the study sample was aware of and had heard about the presence of the national "100 Million Healthy Lives" campaign. Similarly, 90.6% depended on mass media as a main source of knowledge about the campaign. On the other hand, about 36.7% reported that "other health education campaigns previously held at the university" were a main source of information about the campaign for them. Regarding the rate of participation, a large proportion of our workers (96%) participated in the campaign (Table 2).

Table 2. Knowledge about and participation in the national "100 Million Healthy Lives" campaign* (n=400).

Variable		N (%)
Hearing about the campaign	Yes	395 (98.8)
	No	5 (1.3)
Source of information about the campaign **	Mass media	358 (90.6)
	Health education in university	145 (36.7)
	Friends or family members	136 (34.4)
	Contact with medical personnel	103 (26.0)
Participation in the campaign	Yes	384 (96.0)
	No	16 (4.0)

**More than one answer could be chosen. **n=395*

The main factors identified by our workers as reasons for participation are "evaluating their health status" (92%), followed by "obtaining a follow-up card" (36%), while 35% had participated because of the free investigations that were provided during the campaign (Figure 1).

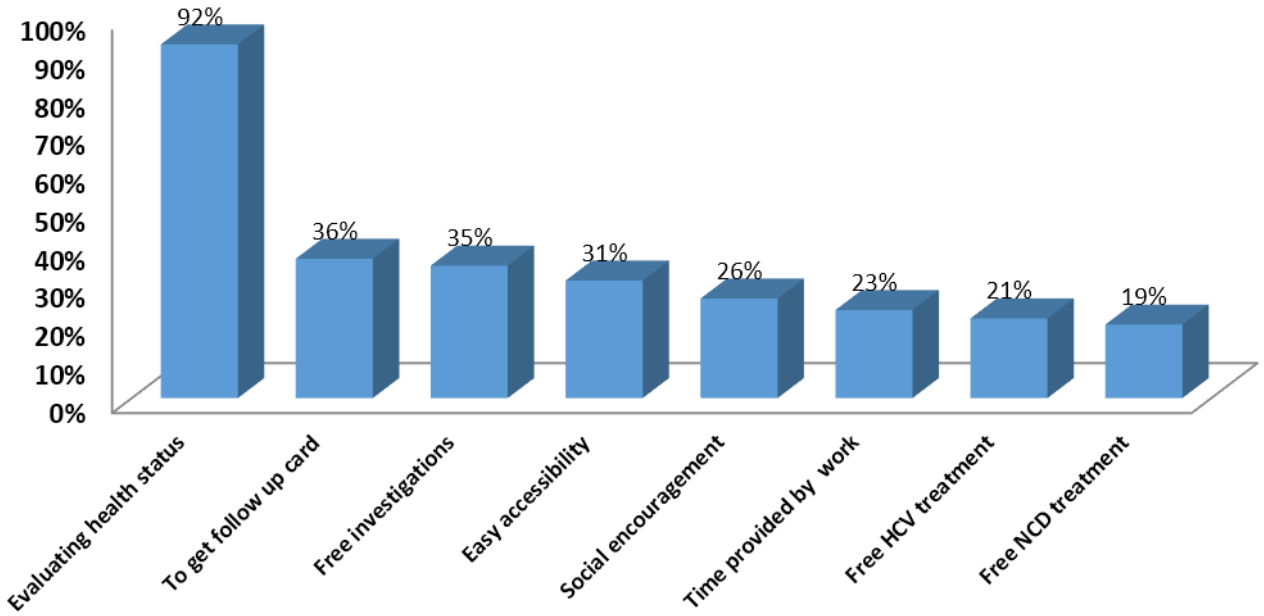

Figure 1. The distribution of the causes of participation in the national "100 Million Healthy Lives" campaign (n = 384); *More than one answer could be chosen.

Only 16 out of the 400 ASU administrative workers (4%) did not participate in the campaign. The main causes behind non-participation were “fear of the needle prick”, reported by 50% of non-participants, “fear of poor sanitation and poor infection control procedures”, reported by 31% of the non-participants, and “not being enthusiastic about the campaign” also reported by 31% of the non-participants. Other causes of non-participation included “fear of crowdedness”, “being a previously diagnosed patient” and “not having enough time”, all reported by 25% of the non-participants (Table 3).

Table 3. Causes of non-participation in the “100 Million Healthy Lives” campaign (n=16).

Variable N (%)		
Causes of non- participation*:	Fear of needle prick	8 (50.0)
	Fear of poor sanitation	5 (31.0)
	Not enthusiastic	5 (31.0)
	Fear of Crowdedness	4 (25.0)
	Previously diagnosed patient	4 (25.0)
	Time not enough	4 (25.0)
	Not useful	2 (12.5)
	Too distant	2 (12.5)

**More than one answer could be chosen.*

Regarding self-reported satisfaction and factors affecting it, a very high percentage of the participants (91.4%) reported being satisfied with the campaign. About 94.2% of the participants reported “easy accessibility” to the campaign. 71% reached the campaign setting in less than 10 minutes, and only a small proportion (15.8%) of the participants took more than 15 minutes to reach the campaign settings. Regarding waiting time, it seemed reasonable as 67.7% reported: "not waiting for long a time”. However, more than half of the participants (57.6%) did not receive any explanation before the procedures were done. Moreover, 51.8% of those with abnormal results did not receive any counseling after the screening. All the participants reported receiving all services completely free of charge (Table 4).

Table 4. Satisfaction of participants with the campaign and factors expected to affect it. (n = 384).

Variable		**N (%)**
Satisfaction	Satisfied	351 (91.4)
	Not satisfied	33 (8.5)
Easy accessibility to the campaign:	Yes	362 (94.2)
	No	22 (5.7)
Time taken to reach the campaign	Less than 10 minutes	273 (71.0)
	11-15 minutes	50 (13.6)
	More than 15 minutes	61 (15.8)
Long waiting time	Yes	124 (32.2)
	No	260 (67.7)
Explanation before evaluation	Yes	163 (42.4)
	No	221 (57.6)
Counseling provided to participants who had abnormal results*	Yes	85 (48.2)
	No	79 (51.8)
Money paid	Yes	0 (0.00)
	No	384 (100)

**(n=164)*

4. Discussion

HCV and NCDs are considered major public health issues facing our lives. The 2015 Egypt Health Issue Survey (EHIS) showed a marked reduction in the overall prevalence of HCV infection from 14.7% in 2008 to 10% in 2015 among those aged 15 –59 years [2]. In order to control HCV in Egypt, currently, the main goal is to detect asymptomatic HCV carriers within the community [8]. Accordingly, a national health campaign was conducted for the early detection and treatment of HCV and NCDs.

The participation rate in this study group was quite high at 96%, much higher than the participation of the general population at the end of the first stage of the campaign which was 65.5% [7]. This could be explained by the fact that this group was highly educated and worked in a large university in the middle of Cairo, the Egyptian capital. Together these factors provided knowledge, awareness, and accessibility to the campaign for our study group. The main source of information for the study group about the campaign was from mass media (90.6%), followed by health education programs previously held on the university campus (36.7%) or from friends and families (34.4%). The EHIS (2015) also found mass media to be the main source of health information for participants in their study at 88.5%. Mass media campaigns work either in direct or indirect ways and can change the behavior of populations [9]. They possess the power to mobilize communities and change behavior. Although other studies have found that the behavioral change approach of health interventions has moved beyond the interpersonal and mass media levels to interventions at interpersonal, small groups, organizational, community, and cultural levels [10], our study demonstrates that mass media still has a major role in health campaigns. Contact with medical personnel was not a strong source of information about the national campaign whereas only 26% said that they gained knowledge about the campaign through that channel.

When we asked participants about the causes that encouraged them to participate in the campaign, 92% said that their main motive to participate in the campaign was to "evaluate their health status". This finding supports what these health campaigns aspire to; that every individual within the community be aware of his health and be keen to preserve it. Also, Chien et al. (2019) in Taiwan found that most participants (96.2%) reported the same reason for participating in health screening campaigns [11]. Easy accessibility to the campaign was a main motive to participate in about 30% of our participants. Easy accessibility was the most important factor encouraging participation in health examination surveys in the study by Tolonen et al. (2017) [12]. In the study by Chien et al. (2019) [11], easy accessibility was the second most common cause of participation in screening campaigns (95.1%), but elderly participants (over 60 years) composed a large proportion of their sample at 55% [11]. All our participants were younger than 60 years of age. Social encouragement by friends and family was considered a reason for participation in about 26% of our participants compared to 72.7% in the study by Chien et al. (2019) [11]. This could probably be explained by the difference in age of the two study groups as the elderly would probably need more social support and encouragement to share in health programs. In our study, about 35% mentioned that their motive to participate in the campaign was "to obtain the follow-up card" and "to get free investigations". "The provision of free treatment" was a motive in another 20% of our participants. On the other hand, 70.6% of the participants in the study by Chien et al. (2019) [11] reported that "gifts offered during the campaign" were a main reason for their participation [11]. Tolonen et al. (2017) [12] reported that 28% of their study group identified "financial compensation" as a cause for future participation in health campaigns. This illustrates that financial incentives could have a role in encouraging participation in health campaigns.

Out of the 400 subjects in our study, 16 persons (4%) didn't participate in the campaign despite it being free of charge, easily accessible, and even with the provision of free investigations and treatment. The main cause of the non-participation in the campaign as

reported by eight participants (50%) was "fear of needle prick", followed by "concerns of poor sanitation and infection control" and "lack of enthusiasm" to participate in the campaign both at 31%. On the other hand, the study by Tolonen et al. (2017) **[12]** in Finland showed that the most common reason for non-participation (52.4%) was "provided time or place of examination was not suitable", or what we could refer to as "poor accessibility" [12]. This was not a factor present in our campaign as settings were widely spread over the country and the services were provided throughout the day. Employees were even encouraged to take permission from work to participate in the campaign. Healthcare workers were recruited from all over the country to share in the campaign. All these measures were carried out so that citizens would be highly encouraged to participate in the campaign and to receive services promptly. One-quarter of our participants mentioned "fear of crowdedness", "not having enough time" and "being a previously diagnosed patient" as other causes of non-participation. Only two subjects out of sixteen described the campaign as "being not useful" or "too far" as a cause of their not participating in the campaign.

Future campaigns should take care to alleviate persons' fear of needle prick and concerns about sanitation and infection control to improve participation rates. These messages could be spread and emphasized using mass media. However, the non-participation rate (4%) still remains very low compared to the rate of participation (96%) and this reflects the success of the campaign in reaching a wide proportion of citizens.

Another important indicator that reflects the success and continuity of health campaigns is participant satisfaction. It is considered an important indicator and outcome measure of healthcare quality [13]. Up to 91% of our participants were satisfied with the campaign's services. This high rate of satisfaction is based on many factors as easy accessibility to reach the campaign setting where about 94% had reported that "the campaign was easy to reach", time taken to reach was reasonable where 71% showed they "reached the campaign setting in less than ten minutes", short waiting time where 68% reported, "not waiting a long time". Also, a very critical factor is that all the services were offered completely free of charge as all the participants confirmed. All these factors helped in reaching a high participant satisfaction rate, even though around 57% of the participants did not receive suitable explanations of procedures beforehand and about 52% of those with abnormal screening results did not receive suitable counseling after hand. Healthcare providers were very busy during the campaign and were practically extremely overloaded. This could explain why suitable explanations and counseling were not provided to all participants. In a research by Owaidh et al. (2018) in Saudi Arabia, patients reported "doctors and nurses not explaining the disease, medicine, and other health-related issues clearly" as the factor that mostly affected satisfaction [14]. Still, our participants were satisfied despite not being provided with suitable explanations or counseling.

5. Conclusion

The "100 Million Healthy Lives" campaign had many factors that lead to its success as a health campaign in this study group. The majority of the study group participated and was satisfied with the campaign. Also, this study showed that mass media had a very effective role in the awareness of the campaign. The main cause of participation was to "evaluate health status", whereas the main cause of non-participation was "fear of needle prick", after other known causes of non-participation were alleviated. Those planning future campaigns could benefit from the lessons provided by this campaign.

Recommendations

Further research is still needed to identify the different factors affecting participation and satisfaction with health campaigns and screening programs, especially those carried

out at national levels and across different cultures. Mass media is still an important channel for health communication and should be employed. Care should be given to provide suitable explanations and counseling to participants in health campaigns and screening programs, due to their great importance.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

References

[1] GLOBAL Innovation Index. Creating Healthy Lives - the Future of Medical Innovation. Chapter 12: Life Is Too Short with HCV and NCDs— 100 Million Healthy Lives Initiative 2019; 12th ed: 157-60 Global Innovation Index 2019 – 12th Edition (WIPO.int)

[2] MOHP, Ministry of Health and Population [Egypt], El-Zanaty and Associates [Egypt], and ICF International. Egypt Health Issues Survey 2015. Cairo, Egypt, and Rockville, Maryland, USA: Ministry of Health and Population and ICF International; 2015.

[3] World Health Organization. Non-communicable Diseases Country Profiles; 2018. Available at: https://www.who.int/nmh/countries/egy_en.pdf [last accessed on 20 February 2020].

[4] Kandeel A, Genedy M, El-Refai S, Funk AL, Fontanet A, Talaat M. The prevalence of hepatitis C virus infection in Egypt 2015: implications for future policy on prevention and treatment. Liver Int 2017;37(1):45-53. doi: 10.1111/liv.13186

[5] Gomaa A, Allam N, Elsharkawy A, El Kassas M, Waked I. Hepatitis C infection in Egypt: prevalence, impact and management strategies. Hepat Med 2017;9:17-25. doi: 10.2147/HMER.S113681. Erratum in: Hepat Med. 2017 Jul 26;9:35.

[6] Campbell, M. (1988). Burton R. Clark, ed. The Academic Profession: National, Disciplinary, and Institutional Settings. Berkeley, University of California Press, 1987. pp. xii, 409. History of Education Quarterly 1998;28(3):484-8. doi:10.2307/369108

[7] Ministry of Health and Population (MOHP), Press conference of minister of health and population announcing the debut of the second phase of initiative of 100 million healths; 2018. Available at: http://www.stophcv.eg/media/VideoAlboum/3059 [last accessed on 18 January 2019].

[8] El-Ghitany EM, Farghaly AG. Geospatial epidemiology of hepatitis C infection in Egypt 2017 by governorate. Heliyon 2019;5(8):e02249. doi: 10.1016/j.heliyon.2019.e02249.

[9] Hornik R, Yanovitzky I. Using theory to design evaluations of campaigns: the case of the National Youth Anti-Drug Media Campaign. Commun Theory 2003;13:204-24

[10] Gautam Santosh. Mass Media for Health Communication and Behavioural Change: A Theoretical Framework. Journal of Media and Social Development 2016;4(3):20-35.

[11] Chien SY, Chuang MC, Chen IP, Yu PH. Primary Drivers of Willingness to Continue to Participate in Community-Based Health Screening for Chronic Diseases. Int J Environ Res Public Health 2019;16(9):1645. doi: 10.3390/ijerph16091645

[12] Tolonen H, Lundqvist A, Jääskeläinen T, Koskinen S, Koponen P. Reasons for non-participation and ways to enhance participation in health examination surveys-the Health 2011 Survey. Eur J Public Health 2017;27(5):909-11. doi: 10.1093/eurpub/ckx098

[13] Joshi K, Sochaliya K, Purani S, Kartha G. Patient satisfaction about health care services: A cross-sectional study of patients who visit the outpatient department of a civil hospital at Surendranagar, Gujarat. Int J Med Sci Public Health 2013;2:659-63. doi: 10.5455/ijmsph.2013.250420131

[14] Owaidh AO, Atiah AA, Abadi AS, Ali AM, Abdullah AM, Abdullah AA, Hassan AM. Patients' satisfaction with health care services in Southern Saudi Arabia. Egypt J Hosp Med 2018;72:3857-60.