Knowledge about the National Center for Mental Health promotion hotline among the adult population in Saudi Arabia

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ABSTRACT

Background: The National Center for Mental Health Promotion (NCMHP) introduced a new hotline in 2013. The center receives a variety of psychological consultations through the number 920033360, which experienced mental health professionals answer. The present study aims at assessing the knowledge about the NCMHP hotline among the adult population in Saudi Arabia.

Methods: This cross-sectional study design was conducted among the Saudi adult population from August 2021 to September 2021. A pre-validated questionnaire was distributed among the study population using an online platform. The questionnaire included a set of questions about the participant’s socio-demographic characteristics, previous history of mental illness, family history of mental illness, and an assessment of their knowledge regarding the NCMHP. Data were tabulated in Google forms, and all statistical analyses were performed using Statistical Package for the Social Sciences version 26.

Results: 2,910 respondents replied to the questionnaire (49.2% male to 50.8% female). A previous history of mental illness was found among 13.1% and 23.2% of the respondents, respectively. The most common participating age group was 18-30 years old. Of the respondents, 18.7% were aware of the NCMHP hotline service. In univariate analysis, the region of residence and previous and family history of mental illness were the main factors associated with participants’ knowledge about the NCMHP hotline service. In multivariate estimates, previous and family history of mental illness was determined as the significant independent predictors of the NCMHP hotline service knowledge.

Conclusion: The Saudi population had limited knowledge about the NCMHP hotline service. Better knowledge was demonstrated by those with previous or family histories of mental illness.

Keywords: Mental health promotion, Saudi Arabia, mental health, mental illness, hotline.

Introduction

The concept of mental health can be traced back well before the 20th century. However, mental health was not acknowledged as an independent field or discipline until 1946, when the International Health Conference members established the Mental Health Organization in London [1]. Early mental health descriptions define it as an examination of the intellect and passion for investigating their impact on health [2]. The national committees conducted supported research to investigate the cause, diagnosis, and treatment of mental disorders by offering Training to social workers who deal with the mentally ill [3]. The World Health Organization (WHO) asserts that one of the functions of the National Center for Mental Health (NCMH) is to carry out a training
program to develop primary care physicians’ ability to
detect and manage mental disorders [4]. In the 1920s,
the United States NCMH imposed a number of model
commitment laws to organize its work, and it was the
first community to give importance to child guidance
clinics [5]. In 1971, Qatar established a psychological
care service for the first time in the Gulf states [6]. The
other model was in the United Arab Emirates (UAE), one
of the countries that worked on a national project related
to psychological care and the hotline [7,8]. In 2006, the
Kingdom of Saudi Arabia (KSA) established a national
policy for mental health, which included programs for
individuals suffering from drug and alcohol addiction,
the elderly, adolescents, and children.

In addition, hotline services provide medical consultations
around the clock [9]. In 2013, systematic research
relating to the mental health care system in the KSA was
presented. It was in agreement with an evaluation by the
WHO and included previous data from their Ministry of
Health over successive years from 2009 to 2010. At the
time, this indicated that the KSA had made a number of
achievements in this regard, including allocating a large
amount of their total spending to mental health care
[10]. The National Center for Mental Health Promotion
(NCMH) in Saudi Arabia is interested in four important
areas: the execution of mental health policies, plans,
and programs. The second area relates to implementing
mental health service regulations and practices, and
the third involves the administration of mental health
information systems. Last, it involves managing the
programs that target mental health promotion and mental
is responsible for endorsing mental health programs,
correcting the misconceptions that surround mental
health, and combining the efforts of the government and
non-governmental institutions regarding mental health
[12]. The NCMH in Saudi Arabia helps people adjust and
find the appropriate care they need with a licensed mental
health care provider [13]. Saudi Arabia has specialized
in a hotline set up to receive inquiries and complaints
regarding the health care service and will focus primarily
on elderly people [14]. Saudi Arabia was eager to
develop a framework compatible with the community
and its cultural and religious values. Moreover, by
integrating mental health services with public services,
they demonstrated the undesirable impact of drug abuse
and smoking and the negative effects they cause. [9,15].
The mental health promotion hotline study contributes to
several points. Youth organizations work collaboratively
in society. In addition, it is necessary to know the true
capabilities of these young people and work to strengthen
their strength and direct them in the right way.

Moreover, work is done to help them adapt to live in
different environments with different circumstances
in their prosperity or adversity. To promote mental
health lies in several main points, which are as follows:

Develop national programs related to drug abuse that
must be imposed, in addition to establishing effective
mechanisms to implement these programs. In addition,
work must be done on psychological and social awareness
related to showing the extent of addiction damages of all
kinds. Furthermore, providing the appropriate services
to those in need at the right time. Moreover, work on
educating young people in schools through prevention
programs and instructions. This study has several
important objectives: the first goal is that every person,
regardless of who suffers from any mental illness, has
the full right to receive health care, periodic follow-up,
and necessary treatment. The second of these goals is that
every person who has any mental illness has the full right
not to be subjected to economic and human exploitation
or any exploitation, physical harm, or humiliation in all
its forms. Also, there is not supposed to be any racial
discrimination based on mental illness.

**Subjects and Methods**

This study was a descriptive cross-sectional
questionnaire-based study design. It was conducted in
the KSA from August 2021 to September 2021. Adults
were randomly selected and asked to take part in an
online-based survey. The mid-year population in Saudi
Arabia in 2020 was used for sample size calculation, and
the values were placed in the level of precision formula
that yielded a sample size of 385 [16]. The total number
of participants in this study was 2,910. All participants
received an informational online web page explaining
the study’s purpose and requested to provide informed
consent before the online questionnaire. Response
repetition was avoided by linking every survey answer
with an Internet protocol. Male and female adults aged 18
years and above and who could read and write in Arabic
(the official language of Saudi Arabia) were included in
the study. Adults outside of Saudi Arabia and those under
18 years of age were excluded from the study. A pre-
validated questionnaire was used to collect the data [17].
The participants were asked 11 questions, 7 of which
related to socio-demographic characteristics. The four
remaining questions were to establish their knowledge
regarding the NCMH hotline.

A pilot study was conducted to ensure that the questions
were straightforward and understandable. Data were
collected, cleaned, and coded in Microsoft Excel software,
then transported to statistical software Statistical Package
for the Statistical Package for the Social Sciences version
26 for necessary data analyses. All statistical analysis
was carried out using two-tailed tests. *p*-value less
than or equal to 0.05 was considered to be statistically
significant. Descriptive statistics, including frequencies
and percentages, were used to describe the frequency
of each categorical variable item. A chi-square test was
used to establish the association between participants’
socio-demographic characteristics and their knowledge
about the NCMHP hotline. A subsequent multivariate
regression table was performed to determine the
significant independent predictor associated with their
knowledge about the NCMHP hotline.
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In total, 2,910 respondents met the inclusion criteria (male: 49.2% vs. female: 50.8%). Table 1 presents the participants’ socio-demographic characteristics. The most common participating age group was 18-30 years old (52.1%), with more than half having a bachelor’s degree (53%). Participants in the Central region constituted 33%, while those living in the Northern region constituted 25.9%. Furthermore, 48% of the respondents were married, while 47.6% were single. The proportion of respondents who were having children was 45.6%, while the previous history of mental illness and family history of mental illness constituted 13.1% and 23.2%, respectively. The assessment of knowledge regarding the NCMHP is given in Table 2. It can be observed that the prevalence of participants who previously contacted the NCMHP hotline was only 5%. We further observed that 14.5% of respondents had referred the NCMHP hotline to other people. The proportion of respondents who knew about the NCMHP hotline was 18.7%. In addition, 63.5% were aware that the NCMHP hotline offered mental health constitutions.

When measuring the effect of knowing about the NCMHP hotline concerning the socio-demographic characteristics of participants, it was found that the prevalence of respondents with knowledge about the NCMHP was more common among those living in the Central region ($p = 0.005$). On the other hand, respondents with no previous history of mental illness ($p < 0.001$) and those without a family history of mental illness ($p < 0.001$) were significantly more unaware of the NCMHP. In a multivariate regression model, the likelihood of respondents with a previous history of mental illness knowing about the NCMHP hotline was twice as high as those without any previous history of mental illness [adjusted odds ratio (AOR) = 2.087; 95% confidence interval (CI) = 1.591-2.739; $p < 0.001$]. We observed that respondents with a family history of mental illness were 1.4 times more likely to know about the NCMHP hotline (AOR = 1.424; 95% CI=1.124-1.803; $p = 0.003$). On the other hand, the residence region did not particularly influence the knowledge about the NCMHP hotline after adjustments to the regression model ($p > 0.05$) (Table 4).

### Results

In a multivariate regression model, the likelihood of respondents with a previous history of mental illness knowing about the NCMHP hotline was twice as high as those without any previous history of mental illness [adjusted odds ratio (AOR) = 2.087; 95% confidence interval (CI) = 1.591-2.739; $p < 0.001$]. We observed that respondents with a family history of mental illness were 1.4 times more likely to know about the NCMHP hotline (AOR = 1.424; 95% CI=1.124-1.803; $p = 0.003$). On the other hand, the residence region did not particularly influence the knowledge about the NCMHP hotline after adjustments to the regression model ($p > 0.05$) (Table 4).

### Discussion

This study was carried out to determine the level of awareness of the Saudi adult population regarding the NCMHP hotline service. To the best of authors’ knowledge, this is the first study conducted in Saudi Arabia to assess such knowledge.
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Arabia to measure the general public’s awareness of the hotline service provided by the NCMHP. The findings of this study indicated that the Saudi adult population was not aware of this service. Out of 2,910 respondents, 18.7% were aware that it existed; the remaining participants (81.3%) did not know of it at all. This finding is in agreement with the paper by Mahmoud [18]. Based on their responses, 87% of the general population were unaware that a psychiatric service existed in Saudi Arabia. However, in the United States, the authors reported that a large proportion of the respondents were uninformed about their mental health benefits, with one-quarter unsure if their health plan even included mental health service treatment. This lack of information may represent a barrier to seeking care through mental health care institutions [19]. Moreover, a negative attitude toward using mental health services had already been investigated in the publication. They explored people’s attitudes toward help-seeking for mental illness in two population-based surveys in the United States and Canada [20]. Accordingly, they

<table>
<thead>
<tr>
<th>Factor</th>
<th>Knowledge</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With knowledge</td>
<td>Without knowledge</td>
</tr>
<tr>
<td></td>
<td>N (%) (n = 544)</td>
<td>N (%) (n = 2,366)</td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–30 years</td>
<td>291 (53.5)</td>
<td>1,226 (51.8)</td>
</tr>
<tr>
<td>&gt;30 years</td>
<td>253 (46.5)</td>
<td>1,140 (48.2)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>277 (50.9)</td>
<td>1,154 (48.8)</td>
</tr>
<tr>
<td>Female</td>
<td>267 (49.1)</td>
<td>1,212 (51.2)</td>
</tr>
<tr>
<td>Level of education</td>
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<td>Diploma or below</td>
<td>227 (41.7)</td>
<td>971 (41.0)</td>
</tr>
<tr>
<td>Bachelor or higher</td>
<td>317 (58.3)</td>
<td>1,395 (59.0)</td>
</tr>
<tr>
<td>Region of residence</td>
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<td></td>
</tr>
<tr>
<td>Northern region</td>
<td>112 (20.6)</td>
<td>643 (7.2)</td>
</tr>
<tr>
<td>Southern region</td>
<td>79 (14.5)</td>
<td>276 (11.7)</td>
</tr>
<tr>
<td>Central region</td>
<td>204 (37.5)</td>
<td>757 (32.0)</td>
</tr>
<tr>
<td>Western region</td>
<td>47 (8.6)</td>
<td>226 (9.6)</td>
</tr>
<tr>
<td>Eastern region</td>
<td>102 (18.8)</td>
<td>464 (19.6)</td>
</tr>
<tr>
<td>Marital status</td>
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<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>293 (53.9)</td>
<td>1,220 (51.6)</td>
</tr>
<tr>
<td>Married</td>
<td>251 (46.1)</td>
<td>1,146 (48.4)</td>
</tr>
<tr>
<td>Having children</td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>248 (45.6)</td>
<td>1,079 (45.6)</td>
</tr>
<tr>
<td>No</td>
<td>296 (54.4)</td>
<td>1,287 (54.4)</td>
</tr>
<tr>
<td>Previous history of mental illness</td>
<td>129 (23.7)</td>
<td>252 (10.7)</td>
</tr>
<tr>
<td>No</td>
<td>415 (76.3)</td>
<td>2,114 (89.3)</td>
</tr>
<tr>
<td>Family history of mental illness</td>
<td>183 (33.6)</td>
<td>491 (20.8)</td>
</tr>
<tr>
<td>No</td>
<td>361 (66.4)</td>
<td>1,875 (79.2)</td>
</tr>
</tbody>
</table>

*p-value has been calculated using the chi-square test.

** Significant at p < 0.05 level.

Table 3. Relationship between the knowledge about the NCMHP hotline, and the socio-demographic characteristics of participants (n = 2,910).

Table 4. Multivariate regression analysis to determine the independent significant factor associated with knowledge about the NCMHP hotline (n = 2,910).

<table>
<thead>
<tr>
<th>Factor</th>
<th>AOR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region of residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern region</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern region</td>
<td>1.174</td>
<td>0.873-1.578</td>
<td>0.289</td>
</tr>
<tr>
<td>Central region</td>
<td>0.830</td>
<td>0.595-1.159</td>
<td>0.275</td>
</tr>
<tr>
<td>Western region</td>
<td>0.957</td>
<td>0.729-1.254</td>
<td>0.748</td>
</tr>
<tr>
<td>Eastern region</td>
<td>1.238</td>
<td>0.840-1.825</td>
<td>0.281</td>
</tr>
<tr>
<td>Previous history of mental illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2.087</td>
<td>1.591-2.739</td>
<td>&lt;0.001 **</td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family history of mental illness</td>
<td>1.424</td>
<td>1.124-1.803</td>
<td>0.003**</td>
</tr>
<tr>
<td>No</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adjusted Odds Ratio (AOR); Confidence Interval (CI).

** Significant at p < 0.05 level.
discovered that negative attitudes toward mental health service use are prevalent in the community, contributing to higher treatment discontinuation. The authors surmised that government agencies in both countries should pay attention to people’s perceptions of mental illness and could implement regionally appropriate education, screening, and intervention campaigns to overcome the attitudinal barriers to seeking mental health care treatment.

Previous and family history of mental illness contributed greatly to participants knowing about the hotline services of NCMHP, as they have a progressive attitude to seeking mental health care. In this study, 13.1% and 23.2% of the sample population reported having previous and family histories of mental illness, and they are notably more knowledgeable about the hotline service of NCMHP. Concerning this, Dawood and Modayfer [21] provided conflicting views, indicating that more than one-third of the participants (36.9%) had a family member diagnosed with mental illness. In comparison, around two-thirds (62.2%) knew someone diagnosed with a mental illness other than a family member. They further explained that individuals who received mental health treatment themselves or have a family member treated for mental health problems reported a more tolerant attitude toward community mental health care. Conversely, Mahmoud [18] noted that the groups, male gender age >20 years, not knowing whether a relative has mental illness, and not knowing about the services provided by psychiatric health services in the KSA, were considerably associated with unwillingness to seek psychiatric consultation when needed.

Relatively, it is important to emphasize that even though 63.5% were aware that the NCMHP hotline offered mental health services, the lack of information about the existence of NCMHP services is very obvious. Our results indicated that only 5% of the study participants had ever contacted the institution, and only 14.5% had recommended the hotline service to someone. This could be due to the fact that only a minority of participants reported mental health issues. Nevertheless, the NCMHP needs to increase its public presence. Since most people have Internet access, raising awareness through campaigns via social media could be the best way to reach out to the public. As such, it could bring about more awareness and eventually reduce the burden of mental illness in Saudi Arabia. There were few limitations for the study. First, an unavoidable selection bias existed in the web-based survey since it only included participants with internet access. Second, the results were based on a single survey involving the Saudi population. As a result, the generalization of the research study findings to other countries is limited. Finally, the researchers developed their own survey. To their knowledge, there is no well-established, standardized questionnaire covering this topic.

**Conclusion**

The Saudi population had limited knowledge about the NCMHP hotline service. A better comprehension of the services they provide was demonstrated by the individuals with personal experience or family history of mental illness. There is a definite need to increase the public’s awareness of the NCMHP hotline service and the various resources. The NCMHP should make more effort to inform and educate people about their existence and let them know that they are within easy reach, specifically those suffering from mental disorders such as depression, anxiety, and stress. Public awareness about the services provided by NCMHP can lead to the early detection of mental disorders among the adult Saudi population.

**List of Abbreviations**

- KSA Kingdom of Saudi Arabia
- NCMH National Center for Mental Health
- NCMHP National Center for Mental Health Promotion
- SPSS Statistical Package for the Social Sciences
- WHO World Health Organization

**Conflict of interests**

The authors declare that there is no conflict of interest regarding the publication of this article.

**Funding**

None.

**Consent to participate**

Informed consent was obtained from all the participants.

**Ethical approval**

The present study was approved by the Ethics Committee of Imam Mohammad Ibn Saud Islamic University via reference number 102-2021, dated: 23/8/2021.

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**REFERENCES**


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