Original Article

SELF-REPORTED SURVEY ON MEDICINAL USES OF CANNABIS IN HEALTH PROFESSIONALS

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ABSTRACT

Background: Since the medicinal use of cannabis is well-known, there was a need to assess the knowledge, beliefs and experience regarding indications, safety and side effects of prescribing medicinal cannabis among Pakistani health workers.

Material and methods: A cross-sectional survey was conducted among medical and dental students and practitioners selected from different campuses of the two public sector medical universities of Karachi. A self-reported questionnaire was used to record knowledge, beliefs and experience regarding indications, safety and side effects of prescribing medicinal cannabis on a 5-point Likert scale. Data & analyzed was described using IBM SPSS Statistics for Windows, v. 24.0.

Results: A total number of 126 health professionals participated in this study with mean age 24.3 ± 2.5 years and more female (n=90) than males (n=36). The overall distribution of knowledge scores was obtained for 'neutral opinion'. Majority believed that medicinal cannabis can be used for treatment of dementia, chronic non-cancer pain, epilepsy and has anti-tumor effects.

Conclusion: It can be concluded that medicinal cannabis knowledge is limited among health care professionals. Measures must be taken to eliminate the knowledge gap of the health care providers about effectiveness and qualifying conditions of these products.

Key Words: Cannabis, Knowledge, Safety

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INTRODUCTION

Cannabis, also known as marijuana, is a psychoactive drug derived from Cannabis plant. This plant being a native to Central. Asia and Indian sub-continent is widely used as a recreational and entheogenic drug and in many traditional medicinal uses for centuries According to United Nation Office on Drug and Crime, it is the most widely produced and cultivated drug with approximately 182.5 million users globally.[1] Of the 483 known compounds derived, the main psychoactive component, tetrahydrocannabinol (THC), tends to provide feeling of ecstasy and euphoria to the consumer.

It can be used by smoking, vaporization, within food, or as an extract. The THC causes the "high" that people feel bringing changes to mood, altered states of mind and sense of time, difficulty with thinking and problem-solving, impaired memory with hallucinations and delusions depending upon the dose consumed.[2] The use of smoked high potency cannabis (HPC) with high

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concentration of THC and low concentration of cannabidiol (CBD) in psychotic patients is found to have poorer disease outcome as compared to ones who are non-cannabis smokers or who stopped cannabis use.[3,4] The continued use of HPC may lead to increased psychotic episodes and probability of re-hospitalization.[5] However, a survey reported that use low THC/CBD ration in smoked cannabis has been linked to fewer psychotic episodes as compared to ones with high THC/CBD ratio.[6] Furthermore, co-administration of CBD and THC induce less anxiety and fewer psychotic symptoms as compared to THC alone.[7,8]

The THC seems to be responsible for the psychogenic effect of cannabis, whereas CBD may inhibit THC induced psychosis. Therefore, prescribing cannabis with low THC and/or high CBD may reduce harm i.e., allowing cannabis use with less psychotic episodes and less chances of re-hospitalization. Many countries around the globe have now legalized the cultivation of cannabis for research purpose and medicinal use of cannabis. With the increasing evidence, the Federal Government of Pakistan on Tuesday, September 1, 2020 also approved the legalization of cannabis production.[9] Since its medicinal use is well-known, there was a need to assess the knowledge and attitude of medicinal use of cannabis among health workers. Therefore, this survey among Pakistani General Practitioners and Dentists was conducted with an aim to assess their knowledge, beliefs and experience regarding indications, safety and side effects of prescribing medicinal cannabis.

MATERIAL AND METHODS

A cross-sectional survey was conducted for the duration of three months (February 2021-April 2021). Health care professionals who gave consent were included in this study which comprised of medical and dental students as well as practitioners of different campuses of two public sector universities of Karachi.

A self-reported questionnaire was used as a data collection tool which was designed on Google forms. Questionnaire comprised of 4 sections; each section had various questions based on 5-point Likert scale with scores ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). The first part consisted of questions to assess knowledge among health professionals on prescribing cannabis and its related benefits and side effects. The second part constituted a list of diseases and conditions and practitioners were asked whether they support the use of cannabis in such conditions. The third part focused on knowledge and belief on the major side effects of medicinal cannabis whereas the last part consists of questions to evaluate their belief on whether the hazardous effects of cannabis were more as compared to other drugs.

Data was analyzed using IBM SPSS Statistics for Windows, v. 24.0. Descriptive statistics like frequencies and percentages were obtained for categorical variables whereas mean and standard deviation was calculated for descriptive variables.

RESULTS

A total number of 126 health professionals participated in this study. General characteristics of participants showed that their mean age was 24.3 ± 2.5 years. Results revealed that there were greater number of female participants than males, (n=90, 71.4%) and (n=36, 28.5%) respectively. Sample comprised of participants from both medical and dental fields however, medical health professionals constituted the greatest frequency (n=65, 51.5%) where as those belonging to dental filed were slightly lesser in number (n=61, 48.4%). When the participants were inquired about their working experience more than half of respondents (n=77, 61.1%) reported < 2 years of experience in their working field whereas (n=49, 38.8%) had ≥ 2 years of experience. When the level of participants was assessed, it was seen that there was more participation by students (n=72, 57.1%) than practitioners (n=54, 42.2%) (Table 1).

Table 1: Description of survey participants (n=126)

Characteristics	Categories	No (%)	Mean ± SD
Age (yrs.)	---	---	24.3 ± 2.5
Experience (yrs.)	< 2	77 (61.1)	
	≥ 2	49 (38.8)	
Gender	Male	36 (28.5)	
	Female	90 (71.4)	
Profession	Medical	65 (51.5)	
	Dental	61 (48.4)	
Level	Student	72 (57.1)	
	Practitioner	54 (42.8)	

Perceived knowledge about cannabis

Perceived knowledge regarding cannabis in health professionals was assessed in form of various questions, through which scores for knowledge was calculated (Table 2). Surprisingly for most of the questions the participants had greatest frequency for 'neutral opinion', these questions included if their patients had ever been benefitted by the use of medical cannabis (n= 57, 45.2%), opinion regarding availability of cannabis for patients on prescription only (n= 45, 35.7%), level of comfort of health professionals in discussing use of medicinal cannabis with patients (n= 40, 31.7%), health professional's knowledge about the effect of various medicinal cannabis products (n= 41, 32.5%), ability of practitioner to prescribe medicinal cannabis (n= 41, 32.5%), current regulatory approaches towards its usage (n= 40, 31.7%), knowledge of health professionals in differentiating street cannabis and medicinal cannabis (n= 38, 30.1%), cannabis as the risk of abuse and dependence (n=40, 31.7%) , non-preference of cannabis prescription due to side effects (n=41, 32.5%) and opinion about the availability of sufficient scientific evidence regarding cannabis products consumption (n=64, 50.7%).

There were few questions over which the participants had 'strongly agreed', this included opinion about the preference of cannabis use by specialists with shared care (n=62, 49.2%), (n=44, 34.9%) respectively. Less frequency for the responses were obtained over which participants had 'strongly disagreed', this included awareness about different medicinal cannabis products (n=47, 57.1%) and practitioner's ability to help patients to access medicinal cannabis legally (n=49, 38.3%).

Table 2: Survey scores for perceived knowledge about cannabis in health professionals

Knowledge Variables	0	1	2	3	4
I have patients who may benefits from Medical Cannabis	44	11	57	9	5
Medicinal Cannabis products should be available on prescription now for certain indications	16	15	45	42	8
I feel comfortable discussing medicinal cannabis with my patients	12	34	40	32	8
I have good knowledge around the effects of medicinal cannabis products	39	25	41	16	5
I am aware of the different Medicinal Cannabis products and formulations currently available	47	31	30	13	5
I would like the ability to prescribe Medicinal Cannabis products	18	26	41	27	14
Medicinal cannabis should only be prescribed by specialists	13	12	13	26	62
Medicinal cannabis should be provided in "shared care" with a specialist	14	9	29	29	44
Only GPs who have undergone specific training and credentialing should be allowed to prescribe medicinal cannabis	15	19	14	28	50
I know how to help patients legally access medicinal cannabis	49	27	24	18	7
I understand the current regulatory approach to medicinal cannabis	37	26	40	16	7
There is little difference between "street cannabis" and medicinal cannabis products	19	27	38	24	18
I will not prescribe medicinal cannabis as the risk of abuse and dependence is too high	10	22	40	26	28
I will not prescribe medicinal cannabis as the risk of side effects (other than and dependence) is too high	18	23	41	28	16
There is sufficient scientific evidence of the efficacy of medicinal cannabis	8	21	64	23	10
Overall perceived knowledge score prevalence	**359**	**328**	**557**	**357**	**287**

0=strongly disagree, 1=disagree, 2=neutral, 3=agree, 4=strongly agree

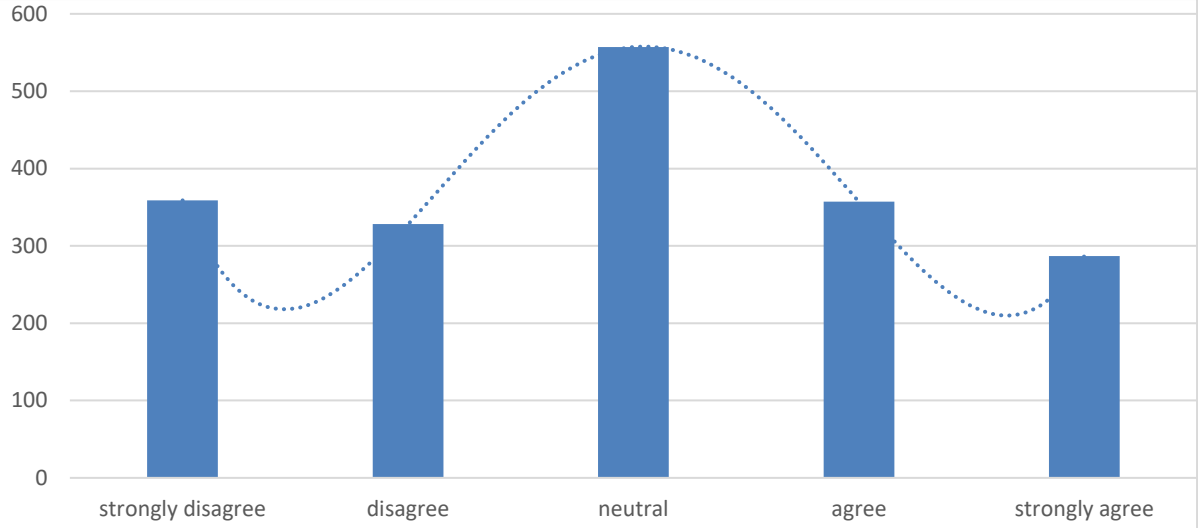

Figure 1: Overall distribution of perceived knowledge scores

Overall score for perceived knowledge for responses like 'strongly disagreed' was 359, for 'disagree' it was 328, 557 responses were recorded as 'neutral' whereas a score of 357 and 287 was recorded for 'agreed' and 'strongly agreed' respectively. Figure 1 shows overall distribution of perceived knowledge scores it clearly depicts that the greatest score was obtained for 'neutral opinion'.

Self-reported indications and side-effects

When the participants were inquired about self-reported indications and their perception about the possible usage, side-effects and contraindications of cannabis products, greatest frequency was obtained for 'neutral reviews'. Majority believed that medicinal cannabis can be used for treatment of various conditions. Amongst all greatest number of respondents believed that it can be used in treating dementia (n=50, 39.9%), followed by management of chronic non-cancer pain (n=47, 37.3%), epilepsy (n=46, 36.5%), some believed that it has anti-tumor effects (n=44, 34.9%), some respondents also believed that it has role in treating multiple sclerosis (n=42, 33.3%), providing palliative care (n=41, 32.5%), PTSD (n=37, 29.3), dealing with insomnia (n=34, 26.9%) and management of anxiety (n=33, 26.1%). Some 'strongly believed' that it also plays a role in treatment of chronic cancer pain (n=46, 35.7%), chemotherapy-induced nausea and vomiting (n=42, 33.3%), curing of neuropathic pain (n=41, 32.5%), managing severe depression (n=30, 23.8%) and managing cachexia in patients associated with severe illness (n=35, 27.7%)

When the questions were asked in order to assess perceived side effects of cannabis usage, majority had an opinion that its constant use as medicinal agent can be hazardous and can cause some serious conditions like weight gain (n=63, 50%), drug interactions (n=72, 39.6%), followed by psychosis (n=46, 36.5%), few impairments like driving impairment (n=38, 30.1%) and cognitive impairment (n=34, 26.9%), mental health issues (n=42, 33.3%) and delay in brain development (n=44, 34.9%).

When the participants were inquired about possible hazards of cannabis it was seen that the participants had neutral opinion, about the question that whether they think that medicinal cannabis are hazardous than prescription of opioids, benzodiazepines, antipsychotics, statins, chemotherapy drugs, antidepressants (Table3). Findings of this study show that most of the participants had some type of cannabis education, and the scores revealed that are participants are moderately aware and knowledgeable about these products.

Table 3: Self-reported indications, side-effects and hazards of medicinal use of Cannabis

Medicinal Cannabis may be used in?	**0**	**1**	**2**	**3**	**4**
Chronic Cancer Pain	23	4	23	45	31
Chronic non-cancer Pain	15	23	47	29	12
Neuropathic pain	20	15	37	41	13
Intractable epilepsy	20	15	46	32	13
Anti-tumour effects	16	19	44	32	15
Spasticity in Multiple Sclerosis	21	18	42	34	11
Dementia patients with agitation	19	16	50	28	13
Insomnia	25	32	34	23	12
PTSD	29	22	37	30	8
Anxiety	28	22	33	22	21
Depression	23	29	29	30	15
End of life / Palliative Care	14	18	41	33	20
Chemotherapy-induced nausea and vomiting	17	15	39	42	13
Cachexia associated with severe illness	15	23	33	35	20
Major Side effects could be?					
Addiction and dependence	16	14	22	24	50
Cognitive impairment	10	10	34	31	33
Driving impairment	7	11	38	35	27
Weight gain	6	10	63	25	14
Psychosis	7	12	46	28	25
Other long-term mental health issues	10	11	42	35	20
Interaction with other medications	6	9	50	35	18
Impact on the developing brain	8	7	44	35	24
Medicinal Cannabis are more hazardous than?					
Prescription opioids	17	12	41	33	15
Benzodiazepines	11	19	48	31	17
Antipsychotics	20	15	48	25	18
Statins	24	20	47	21	14
Chemotherapy drugs	25	19	45	24	13
Antidepressants	19	21	46	23	17

0=strongly disagree, 1=disagree, 2=neutral, 3=agree, 4=strongly agree

DISCUSSION

Throughout the world health care providers play a crucial role in facilitating patients to access medical cannabis.[10-12] Some of the previously reported literature suggested that only a minor population of health care providers believed that medicinal cannabis confers benefits to patients.[13,14] In present study, we assessed knowledge, awareness and perception about indications, contraindications and hazards of prescribing medicinal cannabis among health care providers. Findings of current study revealed that health professionals generally had 'moderate levels' of factual knowledge about these products. The average level of knowledge was moderate as majority had neutral opinion to variety questions (11 out of 15). Possible reason for this finding may be attributed to the fact that the scores were calculated on the basis of self-perceived knowledge. However, these results are in agreement with the study conducted by Philpot et al on-healthcare workers of Minnesota.[15] When the awareness was assessed regarding indications, contraindication and hazards of cannabis usage it was seen that majority had concerns related to it. Similar findings are congruent with a previous study by Kruger et al which revealed that healthcare providers were concerned with drug abuse, interactions, side-effects.[16]

It can be identified that the scores for knowledge obtained in present study is not enough to integrate cannabis into patient care. In the light of these findings, it is recommended that consistent clinical guidelines are required in order to reduce barrier between integration of medicinal

cannabis into health care system. Additionally, detailed information which is similar to FDA-approved medication is currently lacking from medicinal cannabis products which might be acting as a barrier.[17,18] Limitation of present study was that it was conducted in two public sector universities only which might be reason for 'moderate levels' of score, another possible explanation for this outcome might be the fact that both students and practitioners were included resulting in lower knowledge scores. Hence, large scale studies are recommended on similar topic.

CONCLUSION

It may be concluded that medicinal cannabis knowledge is limited among health care professionals. Measures must be taken to eliminate the knowledge gap of the health care providers about effectiveness and qualifying conditions of these products. Furthermore, clinical trials are also needed about how medical cannabis improves quality of life which will help in clinical decision making.

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Conflict of interest
The authors declare that there is no conflict of interest

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AUTHORS' CONTRIBUTION

SM: Wrote the manuscript.
SHBT: Collected and entered the data in software.
AK: Collected and entered the data in software.
HJ: Collected and entered the data in software.
WA: Interpreted the results and critically reviewed the manuscript.
AQ: Conceived the study idea, performed the analysis and supervised the study.

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