

Spotlight

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WORKOUT CONNECT

Recent research conducted at the University of Colorado Boulder revealed that smoking cannabis may help people get rid of lethargy and get active. For the study, researchers surveyed 600 cannabis users in California, Colorado, Nevada, Oregon and Washington

ISHA ARORA

A TA CONFERENCE held in New Delhi late last year, speakers debated the many uses of cannabis, generally seen as only a psychotropic substance. One after the other, they threw light on the many positive uses of the plant and its derivatives—as medicine, fibre, fuel and fodder. The message was clear: it is myopic to blindly ban plants and their processing just because they yield some harmful substances. As Jitendra Singh, minister of state for Prime Minister's Office, said at the conference ('Cannabis R&D in India: A Scientific, Medical & Legal Perspective'), "Since ancient times, cannabis-based products like *bhang* have been a part of Indian culture, social customs and festivals. There is a very thin line between use, misuse and abuse of a substance, and it is our responsibility to draw that line, so that we do not throw the baby out with the bathwater."

It, indeed, is a fine line. But the good news is that many states in India are attempting to reap the benefits of the plant without overstepping the line.

The central law that deals with cannabis in India is the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985. As per it, sale, production, consumption and trade of cannabis resin and flowers is prohibited. But state governments have the right to alter or devise rules pertaining to cannabis-related cultivation and sale, with respect to the purposes it's being done for.

The Act defines cannabis as "the flowering or fruiting tops of the cannabis plant (excluding the seeds and leaves when not accompanied by the tops) from which the resin has not been extracted, by whatever name they may be designated." Since the consumption of *bhang* is an integral part of a lot of Hindu festivities, it was carefully dropped from the Act. That is precisely why *bhang* tablets (made from seeds) are easily available at every shop selling cigarettes.

The Council of Scientific and Industrial Research (CSIR), established by the Government of India as an autonomous institution, was granted a licence by the J&K government two years ago to undertake research activities with respect to identification of the medicinal value of cannabis. The institution collaborated with startups such as Bombay Hemp Company (BOHECO) and Nirog Street to dig deep into the subject. BOHECO was founded as a hemp research company, but ventured into online sales of hemp-based merchandise soon after. Nirog Street, on the other hand, is a platform exclusively for Ayurveda practitioners to connect with patients and build their digital reputation. Since many other countries have taken to legalising cannabis for medicinal purposes, Ram Vishwakarma, director of CSIR-Indian Institute of Integrative Medicine sees it becoming a reality in India as well. "Many countries are legalising cannabis for one purpose or the other, so eventually, India will have to follow suit as well. We can't say when and how though. That is under consideration with the central government," Vishwakarma told *Financial Express*.

In July last year, the Uttarakhand government issued a licence to the Indian Industrial Hemp Association (IIHA) for commercial cultivation of industrial hemp. The Uttar Pradesh government also recently spoke of its plan to issue research licences for marijuana cultivation. In February last year, Patanjali Ayurved, too, had said it's studying cannabis at its Haridwar campus. The Odisha government has also reportedly granted licences for medicinal consumption of cannabis-based products—Bhubaneswar-based Ayurveda medicines manufacturer Vedi Herbals has, in fact, been granted permission by the state government and the ministry of AYUSH to manufacture and sell cannabis-based capsules. It also has a doctor onboard to assess a patient's medical history and prescribe medication accordingly.

On the global front, Uruguay and Canada are the only two countries that have fully legalised the consumption and sale of recreational cannabis nationwide. Several countries such as Australia, Chile, Colombia, Germany, Greece, Israel, Italy, Norway, the Netherlands, Peru, Poland, Sri Lanka, Thailand and the UK have taken to legalising marijuana sale and consumption for medicinal purposes—industrial hemp's sale and manufacture is mostly allowed everywhere. As per *Hemp Business Journal* (a US-based newsletter that provides business data, high-level analysis, market research and trends around the hemp industry), the US market for hemp-based CBD (cannabidiol, a cannabis compound) products was estimated at \$390 million in 2018 and could expand up to \$1 billion by 2022.

In the US, 33 states and the District of Columbia have reportedly legalised the medical use of cannabis even as its use remains prohibited for any purpose at the federal level.

High on medicinal value

Cannabis and its various uses have been known in India since 1500 BC. However, only recently have government institutions and startups resorted to working in the field of cannabis-based research and development to find cures of certain ailments. CSIR's tie-up with Nirog Street, a marketplace for Ayurveda doctors, bears testimony to the recognition that cannabis as a medicinal drug is getting now. "Our

THE CANNABIS CONVERSATION

Legalisation of cannabis is a much debated topic. Is it right to outrightly ban its cultivation and production or can we use it selectively for our benefit?

aim is to identify good-quality strains and then identify the medicinal properties of those strains," says CSIR director Vishwakarma. "Two cannabis-based drugs have globally been approved for pain management and to treat epilepsy. There are several others that are under clinical trial," he says, adding that, "...The development of drugs that can be used to treat ailments is still work-in-progress, Vishwakarma says.

"Cannabis is a native plant of India yet its legality currently is quite nightmarish," says Ram N Kumar, founder of Nirog Street. "With the tie-up with CSIR, we aim to bring scientific validation to traditional Indian knowledge in cannabis. Further, we wish to use that (knowledge) to create modern medicine categories, which can help in pain management and other ailments like epilepsy," he says, adding that the cannabis medical industry also faces strong opposition from traditional pharmaceutical companies manufacturing painkillers since ages. "Since pain management is one of the largest categories in healthcare, big pharmaceutical companies are scared of losing their share in the pain management revenue bracket, which is huge," he says.

Ayurveda recommends small doses of it to treat ailments ranging from joint pain to epilepsy and anemia. It has also been recommended for increasing appetite of people suffering from terminal illnesses. As MoS Jitendra Singh said at the Delhi conference: "In the middle of the last century, continued research in the domain gave us mint, which has now become an internationally-used product. We need to replicate this kind of success by exploring the full medicinal potential of cannabis for the treatment and management of pain and health conditions for which there is currently no effective cure."

The first step towards considering legalising the use of cannabis is to understand the chemicals in it. Of all the compounds, or cannabinoids, found in cannabis, the major ones are tetrahydrocannabinol (THC) and cannabidiol (CBD). THC is the psychotropic agent that gives the feeling of intoxication or being 'high', while CBD permeates a soothing effect sans the high. Medicinal experts and practitioners of Ayurveda have prescribed CBD-based treatments for conditions like epilepsy, chronic pain, Crohn's disease, post-traumatic stress disorder, etc.

At the Delhi conference, medical experts, policymakers and researchers concluded that cannabis-based medicines can offer a high-quality, cost-effective solution for patients of chronic diseases, even as they called for extensive amendments to the NDPS Act. "The bar under Section 10 (2) (d) of the NDPS Act, 1985, requiring cannabis to be delivered by the cultivators to the officers of the state government is a major impediment in the cultivation of cannabis plant for medical and scientific purposes through extraction of cannabinoids," said Prasanna Nambodiri, a senior high court advocate dealing with matters related with the NDPS Act. "The failure of many state governments in India to frame NDPS rules providing for cultivation of cannabis is a major hurdle. Such cultivated cannabis can't be resold to private entities by state governments for extraction of cannabinoids in the absence of any provision in the NDPS Act," he added.

The Indian Industrial Hemp Association (IIHA) became the first company to receive a licence to cultivate industrial hemp in Uttarakhand in July last year. "The industrial hemp industry is huge outside of India... it has so many uses, but because of lack of adequate knowledge, it remained an untapped area until recently," says Rohit Sharma, president, IIHA. "We are seeing this trend of people wanting to move from traditional fabrics to hemp due to its manifold benefits and I personally don't think that there's any fibre more sustainable than hemp. The dialogue is on... it has moved from 'hemp education' to 'why not hemp?'" says Sharma.

Industrial perspective

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— JAHAN PESTON JAMAS, CO-FOUNDER, BOMBAY HEMP CO, A HEMP RESEARCH COMPANY



BOHECO is another frontrunner in the segment that is actively selling hemp-based merchandise. Its primary product offerings are raw hemp fibre (bast and hurd), processed fibre, yarn, fabrics, garments, accessories and hemp seed oil for external application. Jahan Peston Jamas, co-founder, BOHECO, says they source raw fibres and seeds from farmer groups and government nodal agencies based out of Uttarakhand and also rely on Romania, Taiwan, Italy and China to get higher grades of hemp fibres, yarn and fabric.

BOHECO has partnered with CSIR-National Botanical Research Institute (NBRI), Lucknow, and CSIR-IIIM, Jammu, to focus on research and development of industrial hemp and medical cannabis. The project with NBRI is focused on Uttarakhand and Uttar Pradesh, which have already issued government orders for research and commercial propagation of hemp, says Jamas. "With the IIIM, we are looking at developing medical products (phytopharma and generics) from the cannabis plant using chemical compounds in the forms of THC and CBD, which will be directed towards diseases, including epilepsy, pain management and cancer

studies," he adds.

Bengaluru-based Namrata Hemp Company has also been manufacturing a range of hemp-based skin and hair products since 2017 and is working on launching hemp textiles and hemp bio-degradable composites in years to come. "Our brand has grown from eight orders per month to 200 since the time of launch, with 58% returning customers. We are projecting to triple the number in the following year," says Harshaavardhan Redi Sirupa, founder of the company.

Challenges to production

Bhubaneswar-based Ayurveda medicines manufacturer Vedi Herbals did not have it easy while trying to procure a licence for manufacturing medicines with CBD or THC oil. "It took me three-four years to figure out how I can procure a licence to make cannabis-based medicines... I got the approval to use cannabis in making medicines only six months back," says Sourab Agarwal, director, Vedi Herbals. "We faced a lot of challenges... educating the government was one... we started by selling Ayurveda products and ventured into cannabis-based products only recently. Also, CBD is being hyped nowadays, but THC also has its benefits. In fact, it is much more beneficial than CBD. When you have everything together, like a full-spectrum extract, all cannabinoid oils, then it works like a miracle drug," Agarwal adds.

"When we started approaching the government in 2012, we were the first company to present to them a proposal to explore cultivation of low-THC cannabis under Section 14 of the Narcotic Drugs and Psychotropic Act, 1985," recalls Jamas of

BOHECO. "Until then, the government always perceived cannabis as a liability and it was an uphill task to educate them that cannabis can also be food, clothing and shelter," he adds.

BOHECO was founded in 2013 and, till the end of 2015, remained a largely bootstrapped business. Lack of understanding of the regulatory authority behind the grant of licences and state mechanism were two major hurdles that BOHECO faced upon inception. "The complexity of state mechanism to formulate rules for cultivation of industrial hemp is the biggest regulatory hurdle. The secondary regulations include understanding and acceptance of FSSAI (Foods Safety and Standards Authority of India) of industrial hemp as foods, which are already globally becoming one of the biggest industries," Jamas adds.

Namrata Hemp Company did not have it easy either. "The policy is that chicken is legal, but eggs are not. Hemp fibre is legal and has a tax rate, whereas the main straw is illegal," says founder Sirupa. "Though NDPS Section 14 clearly gives the power to the state to issue a licence for cultivation of cannabis for the purpose of seeds, fibre for industrial purpose and for medicinal research and medical products, there is no policy or regulation as to who has to issue the licences... the required application process is also not available," he adds.

Cannabis crusaders

An Ahmedabad-based professional who didn't want to be named says he consumed capsules infused with CBD oil and coconut oil to treat chronic back pain arising from a slip disc ailment some time back. "I had been consuming the painkiller Tramadol for a while, which did not offer much respite. It also damages the liver as one of the side-effects. Then I got to know of CBD oil being beneficial via support groups on Facebook," he says. What followed was months of extensive research by him, which ended at Vedi Herbals' doorstep. "I took CBD capsules for 20 days and my pain subsided," he says.

While he had easy access to CBD oil, the procurement picture was very grim just a few years back. In 2014, 26-year-old Priya Mishra thought she was going to die a painful death after the directly observed treatment she was undergoing for lymphocytic tuberculosis failed to provide any respite. "I knew that I was dying. I had stopped eating, I wouldn't get out of bed, the swelling had increased instead of reducing, and there was no way for the pain to subside," she says. It was then that she turned to cannabis. Mumbai-based Mishra, who is also India's first cannabis activist, started consuming the alleged drug by smoking it in the form of joints (made by mixing tobacco with marijuana or by just crushing marijuana) while on medication, and then stopped the medication altogether in two weeks. The decision to stop the allopathic medication, Mishra claims, stemmed from her noticing the positive effects of consuming marijuana in the form of reduced swelling, pain, increased appetite, etc. "I had figured that I would do nothing, but take cannabis to cure myself," she adds. Mishra today claims to have been declared tuberculosis-free.

While undergoing the cannabis-only treatment, Mishra also got in touch with doctors across India and overseas to understand the benefits of the herb better. She took to travelling extensively in the years to follow to educate people and spread awareness on the medicinal properties of



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— PANKAJ CHATURVEDI, DEPUTY DIRECTOR, CENTER FOR CANCER EPIDEMIOLOGY, TATA MEMORIAL CENTER, MUMBAI

cannabis. She also founded two companies—Hempvati and Quantum Botanica—with the purpose of guiding people with various ailments to the right doctors for natural treatments. As of now, the two companies are only involved in educating patients and providing consultancy services since there is lack of adequate knowledge with respect to the use of cannabis for purposes other than recreational.

What about tobacco, alcohol?

Addictive substances such as tobacco and alcohol are openly purchased and consumed in the Indian market, while marijuana consumption, even for medicinal purposes, is frowned upon. Among the two, alcohol still has medicinal properties and health benefits, while tobacco is downright poison for the human body. Yet the two substances are categorised as 'luxurious products' and yield the highest tax rate among commodities. "Though cannabis is a psychoactive drug and causes intoxication, its addictive potential is lower than that of tobacco, alcohol, heroin and cocaine," says Vivek Benegal, professor at the Centre for Addiction Medicine, Nimhans. "In fact, the cannabis plant and its commonly used forms like *ganja*, *bhang*, *charas* contain many chemicals that are not psychoactive, and are seen to have opposite actions to that of the predominant chemical that causes intoxication and addiction," he adds.

As per a February 2019 report titled 'Magnitude of Substance Use in India', released by the ministry of social justice and empowerment, about 14.6% of the population (between 10 and 75 years of age) in our country consumes alcohol. In absolute terms, there are about 1.6 crore Indians who consume alcohol on an everyday or recreational basis. On the contrary, about 2.8% of the country's population consumes marijuana in the form of *bhang* and *ganja/charas*.

Pankaj Chaturvedi, deputy director of the Center for Cancer Epidemiology at Mumbai-based Tata Memorial Center, who has been advocating to not legalise cannabis, says the number of people consuming marijuana in the form of *bhang* and *ganja/charas* might rise unconditionally if cannabis is legalised. As far as the difference in the legality status of tobacco/alcohol and marijuana is concerned, Chaturvedi says there should be no basis for differentiation between the damage caused by these substances, as all of them are lethal and dangerous for the human body. "In public health, there is nothing like less lethal or more lethal... if anything is even remotely lethal, it is just plain lethal. You can't give someone the choice to jump from either the 13th or fifth floor," he adds.

Voice of caution

It's true that the health consequences of marijuana addiction are too many to ignore. "Adults who smoke marijuana regularly show impaired neural connectivity. Marijuana users are also at an increased risk of developing chronic psychotic disorders (including schizophrenia). There is an increased incidence of vehicle accidents in those who may be either short-term or long-term users of marijuana," wrote Chaturvedi in a column for *Financial Express* recently. "Cannabis smoking is also associated with an increased risk of bronchitis, pneumonia, respiratory distress, stroke, myocardial infarctions, cannabis arteritis," he wrote.

Commenting on the citations from India's ancient history regarding the use of cannabis for recreational or other purposes, Chaturvedi says going back to the Stone Age can't yield any benefits. "Living in the current times of technological advancements, if we say that our ancestors and sages used to consume it so we should as well, then that doesn't make sense... giving examples from history is illogical because we had ill practices of *sati*, dowry that have now long been abolished," he says. Another fact that needs to be considered before legalising marijuana is the state of the country's youth, as per Chaturvedi. "The youth is living in times of affluence... in the throes of rebellion, they are not able to distinguish between right and wrong. Once the product becomes legal, aspects of branding, marketing, advertisement will come into place and youngsters who are currently socialising with alcohol will begin to socialise with weed," he says.

One might argue that countries worldwide have taken to legalising the drug despite its known risks, but Chaturvedi points out how the legalisation drive in Colorado and Uruguay has gone terribly wrong. In the five years since Colorado legalised marijuana, vehicular fatalities involving people having taken cannabinoid-only or cannabinoid-in-combination medicines increased by 153%. "Organised crime almost tripled in five years. Marijuana possession-related arrests have halved, but not decreased dramatically as anticipated. Post-legalisation, new types of crimes emerged, such as illegal cultivation, sale, production," he notes.

In the case of Uruguay, the medical use of marijuana, which was supposed to be a major source of income for the industry, failed to yield the expected benefits.