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RESEARCH ARTICLE

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Exploring the understanding, source of availability and level of access of cognitive enhancers among university students in the United Arab Emirates: A qualitative study

Safia Sharif[1] | Suzanne Fergus[1] | Amira Guirguis[1,2] | Nigel Smeeton[3] | Fabrizio Schifano[1]

[1]Psychopharmacology, Substance Misuse and Novel Psychoactive Substances Research Unit, School of Life and Medical Sciences, University of Hertfordshire, Hatfield, UK

[2]Pharmacy, Swansea University Medical School, The Grove Extension, Swansea, Wales, UK

[3]Centre for Research in Public Health and Community Care, School of Health and Social Work, University of Hertfordshire, Hatfield, UK

Correspondence
Safia Sharif.
Email: s.sharif2@herts.ac.uk

Abstract

Objective: The use of prescription stimulants for cognitive enhancement by healthy university students, identified as the largest cohort of cognitive enhancer (CE) users, is of growing interest. The purpose of this study was to look at the understanding, perception, experience, and level of access of CEs among healthy university students in the United Arab Emirates (UAE).

Methods: The study was conducted in six highly competitive university programmes. Semi-structured interviews were conducted with 18 university students to discuss their own experiences and those of their friends and peers regarding the use of prescription stimulants. In addition, semi-structured interviews were conducted with seven teaching faculty staff members (registered pharmacists and medical doctors) to explore their views on the use of CEs in their university.

Results: Data were analysed thematically for the identification of themes and subthemes within the data using coding. It was found that, 'Adderall' was the most common prescribed CE drug and caffeine super strength pills were the most common non-prescribed CE drug, both reported to enhance concentration, motivation, and meet academic deadlines.

Conclusions: It is expected that the findings of this study will be of interest to a wide range of services in UAE universities. This will enable them to raise awareness about the use of CEs among students.

KEYWORDS
cognitive enhancers, drug misuse, qualitative, smart drugs, UAE, university students

1 | INTRODUCTION

Cognitive enhancement refers to the augmentation of cognitive capabilities using cognitive enhancers (CEs) such as prescription drugs and illicit drugs (Schelle et al., 2015). The use of CEs in a variety of forms is common in most societies (Plumber et al., 2021). The majority of users believe that CEs improve focus, attention, and thus, academic performance (Plumber et al., 2021). CEs may be readily available substances, such as caffeine or psychostimulants, that are used to improve cognitive functions

(Repantis et al., 2010). Caffeinated products are defined as "soft enhancers," whereas prescription drugs such as amphetamine salt, methylphenidate and modafinil, are considered as "neuro-enhancers" (Maier et al., 2015). University students are at high risk of neuroenhancement usage (Maier et al., 2015; Sharif et al., 2021, 2022; Singh et al., 2014). As these substances may benefit cognitive functioning, they have been utilised by healthy individuals, including university students (Sharif et al., 2021) to improve concentration.

Recent studies from various countries have reported an increase in the use of CE drugs without medical indication among university students to enhance academic performance, such as meeting assignment deadlines and preparing for examinations (Ragan et al., 2013; Volkow et al., 2008). For example, a study conducted in Pakistan found that college students increasingly use prescription stimulating medications such as methylphenidate, modafinil and amphetamine salt for cognitive improvement for the purpose of studying (Shakeel et al., 2021). In France, students who reported the use of CEs started taking them during their first year and were seeking out alertness and wakefulness for competitive exams (Fond et al., 2016). A study from the United States revealed that the non-medical use of prescription stimulants has become a significant issue among college students (Teter et al., 2006), while a study from Canada found that the use of prescription stimulants for non-medical purposes is a common practice among university students (London-Nadeau et al., 2019).

Cognitive enhancers users can find a great variety of these substances in the market, and a recent report has classified 142 unique CEs sub-grouped into 10 categories, according to recently proposed classifications including: prescribed drugs, plants/herbs/products, psychostimulants; image- and performance-enhancing drugs (IPEDs), miscellaneous, GABAergic (gamma-aminobutyric acid-ergic) drugs, phenethylamines, cannabimimetics, tryptamine and piperazine derivatives (Napoletano et al., 2020).

The use of CEs in healthy individuals poses concerns due to the lack of clinical evidence regarding their effectiveness, social and safety consequences, especially with long-term use (Napoletano et al., 2020). The lifetime prevalence of CE use for non-medical reasons, to increase cognitive performances, among university students in the UK and Ireland has been estimated to be around 10% (Singh et al., 2014). Another study in the UK, showed that out of 1614 students, 33% of them had used prescription CEs that had not been prescribed for them (Holloway & Bennett, 2012). In a sample of 4580 US university students, the lifetime prevalence rates of CE use was reported to be 8.3% (Teter et al., 2006) and 6.5% among 1136 Australian university students (Lucke et al., 2018). A meta-analysis from the US estimated that the misuse of CEs among university students was 17% (Benson et al., 2015). In a study conducted in Brazil, out of 1865 students 4.2% reported to having had used CEs in the last 12 months, with the most popular being methylphenidate (Cândido, et al., 2019).

The Global Drug Survey carried out in 2015 and 2017 among healthy university students reported on CEs prescription drug use rates; these increased over time in all 15 countries for which data were analysed (Maier et al., 2018a). Main reported sources of supply for CEs included friends (47.8%); the web (11.8%); family members (6.1%); and physicians (3.8%) (Maier et al., 2018a).

There may be levels of substantial CE use among students in high-ranking universities and highly competitive courses such as Medicine (Fallah et al., 2018a) and Pharmacy (Hanna et al., 2018). A study conducted in Saudi Arabia, a country that is geographically and socially similar to UAE, assessed the prevalence and motivation of illicit use of stimulants in 1177 medical students; some 29 (2.46%) were found to be using stimulants illicitly (Alrakaf et al., 2020). Based on the review of the literature, only one study has been conducted in the UAE; this was focussed on the use of caffeine consumption only as a CEs among University students (Ghali et al., 2016).

These findings from Arabic countries contribute to the international understanding of the phenomenon of smart drug use among students. They suggest that this issue is not limited to Western countries and that cultural and social factors may play a role in its prevalence and use.

This study based on phenomenological research, is the first study in the Gulf countries of university students' non-prescription use of CEs to apply qualitative methods to explore the understanding, perception, behaviour and attitude of CEs use among university students. Therefore, it is intended to fill a gap in the literature about this phenomenon. Our findings are broadly consistent with a quantitative survey of university/course students which reported that one quarter had used CEs (Sharif et al., 2022).

2 | STUDENT INTERVIEWS (PART I)

The aim of this study is to explore the understanding, perception, behaviour, and attitudes towards CE use among university students in UAE.

There are two research questions designed for this part of the study:

1. What are the factors influencing CE use among university students in the UAE?
2. What impact do students who use CEs have on the views and behaviours of non-users?

2.1 | Method and design

Six institutions were included in the qualitative study design: Al-Ain University (AAU) in the Southwest; Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) in the Northeast; and four institutions in the Northern Emirates (Ajman

University (AU), University of Science and Technology of Fujairah (USTF), Ras Al Khaimah Medical and Health Sciences University (RAKMHSU) and University of Sharjah (UOS)). These universities were selected based on their geographical location. Also, this study identified one Ministry of Higher and Scientific Research accredited university offering Dentistry, Medicine, Pharmacy, Engineering, and Nursing courses per state. All selected courses were highly competitive programmes requiring top grades from applicants for entry.

2.2 | Justification for the use of a qualitative approach

Qualitative research methods enable an in-depth, holistic understanding of the relationship between international culture and communication from the perspective of those inside a society or ethnic group (Daymon & Holloway, 2010). Guest et al. (2020) reported that determining the point of saturation, where new incoming data produces little or no new information to address the research question, is a difficult endeavour, because researchers have information on only what they have found (Guest et al., 2020). They agreed and acknowledged that a stopping point for an inductive study is typically determined by the "judgement and experience of researchers" (Guest et al., 2020). The study sample size is increased until the point of saturation is reached (Braun & Clarke, 2006). The sample employed in this study was purposive in nature in order to recruit the participants that matched the inclusion and exclusion study criteria (Hammarberg et al., 2016). Patton (2002) argues that 'the logic and power of purposive sampling lies in selecting information-rich cases for study in depth' (Patton, 2002). Creswell and Clark (2007) thought that during an interview it is important to consider that the more structured an interview is, the less likely it is for the participants to feel at ease and reveal important and relevant issues. However, the less structured the interview, the harder it is to analyse afterwards. The format for an in-depth interview can take on many forms (e.g. scenario-led or task-led). Initially the interview was started with a brief background to the study and permission for interviewing and recording (Adams & Cox, 2008). Confidentiality was also announced by assuring the anonymity of the information and sensitivity concerning its later usage (Creswell & Clark, 2007). Daymon and Holloway (2010) indicated that semi-structured interviews are the most common type of interviews used in qualitative research.

2.3 | Sample

The target population for this study were undergraduate students at various university levels in the UAE. Purposive sampling was initiated as the sampling method to gather data. Purposive sampling is used as a selection method in qualitative research to identify individuals who are knowledgeable with a phenomenon of interest in addition to being willing and available to participate (Palinkas et al., 2015; Patton, 2002).

All students registered in the selected undergraduate universities and the selected programmes aged 18 years or more were eligible for inclusion. Younger; postgraduate; students registered on other courses, were excluded.

The first spoken language in UAE is Arabic (Al-Issa, 2017). However, the English language has become commonly spoken and is taught at all higher education institutions and educational research institutes. Students were given the options to be interviewed in English or Arabic. All participants chose to use English.

A sample size of around 20 was planned based on saturation considerations (Guest et al., 2020). We recruited 18 full-time university students from six institutions. AAU ($n = 5$); MBRU ($n = 3$); AU ($n = 2$), USTF ($n = 1$), RAKMHSU ($n = 3$) and UOS ($n = 4$).

The students were aged between 18 and 24 years, with more females participating in the study ($n = 13$) than males. Around two-thirds of participants were UAE and Arab national residents ($n = 13$), with the balance of international students originating mainly from America, Britain, and Asia. The distribution across subject disciplines and level of study was: Medical students ($n = 5$) from second, third and fourth year, Pharmacy students ($n = 8$) with a majority ($n = 6$) from fourth year and ($n = 2$) from second year, Engineering fourth year ($n = 3$), and fourth year of Dentistry and Nursing ($n = 2$). Demographic data were collected from all participants, nine participants were users and nine were non-users (Table 1).

2.4 | Procedure and data collection

Face-to-face interviews could not be conducted due to COVID-19 pandemic restrictions. To ensure social distancing, individual interviews were carried out remotely, with all the participants in the voice call via 'Zoom' platform and the researcher led the discussions. Online individual interviews to a total of 18 students from six UAE universities were conducted using audio-visual interface 'Zoom'.

The conversations started with covering some points outlined below and the conversational style including requesting a code for the session "pseudonym" (McDermott et al., 2020), assured the participants that their identity remained anonymous. Participants were asked to complete a short demographic questionnaire (consent form), which presented with a short preface defining the misuse of CEs drugs/substances to help with studying or staying focused and alert. Each interview lasted between 20 and 30 min; sessions were recorded using digital recorders (voice only) for transcription. All students were asked the same questions but, in some cases, supplementary questions were asked to elaborate on answers and give more clarification (e.g., *Can you elaborate? Do you want to add more? What do you mean, can you explain?*). The audio files of the interview sessions were transcribed by the researcher.

Codes were then grouped into themes and sub-themes. During the analyses, data and coding were re-examined to confirm and identify additional themes as appropriate until themes are saturated.

TABLE 1 Demography of the participants.

Participants	Gender	University	College	Year group	Type of CE used	Ethnicity
1 (U1)	Female	RAKMHSU	Dentistry	4th	Caffeine pills/Piracetam	Iraqi
2 (N1)	Female	RAKMHSU	Nursing	4th	Non-user	UAE
3 (U2)	Male	USTF	Engineering	4th	Caffeine pills/Guarana	UAE
4 (N2)	Female	RAKMHSU	Pharmacy	4th	Non-user	Egyptian
5 (N3)	Female	AU	Pharmacy	2nd	Non-user	Iraqi
6 (N4)	Female	AAU	Pharmacy	4th	Non-user	Jordon
7 (U3)	Female	AAU	Pharmacy	4th	Adderall, Caffeine pills	Egyptian
8 (U4)	Male	AU	Pharmacy	4th	Adderall, Ritalin, Vitamin B12	UAE
9 (N5)	Female	UOS	Pharmacy	4th	Non-user	Indian
10 (U5)	Female	UOS	Medicine	4th	Adderall	US
11 (U6)	Male	UOS	Medicine	4th	Piracetam	Iraqi
12 (N6)	Female	MBRU	Medicine	2nd	Non-user	US
13 (N7)	Male	AAU	Engineering	4th	Non-user	Iraqi
14 (N8)	Male	AAU	Engineering	4th	Non-user	Syrian
15 (U7)	Female	MBRU	Medicine	4th	Concerta/Guarana	British
16 (N9)	Female	UOS	Pharmacy	2nd	Non-user	Pakistan
17 (U8)	Female	AAU	Pharmacy	4th	Modafinil/Folic acid/Ginkgo biloba/Vit B12	Kuwaiti
18 (U9)	Female	MBRU	Medicine	3rd	Adderall/Modafinil	UAE

Note: U, CE user; N, CE non-user.

Coding is not just labelling, it is linking to the idea, "It leads you from the data to the idea, and from the idea to all the data pertaining to that idea" (Bauch et al., 2011).

Coding was completed by the researcher, then reviewed by the supervisors. All data gathered were analysed thematically to allow for identification of common themes, areas where views and/or practice differed markedly and where information gaps emerged.

2.5 | Ethical considerations

The study received full ethical approval from the University of Hertfordshire UH (UK) [LMS/PGR/UH/04025], RAK Medical and Health Sciences RAKMHSU (UAE) [RAKMHSU-REC-178-2020-PG-P], and the Ministry of Health and Prevention Research Ethics Committee RAK Subcommittee (UAE) [MOHAPIREC/2020/35-2020-PG-P]. Participation was voluntary and anonymous, to ensure anonymity, pseudonyms are used throughout the study. Prior to participation in the study, all potential participants were informed about the aims of the study and their rights to refuse participation or withdraw from the study at any stage without any consequences. An invitation and a consent sheet were sent to each of the students by email before participation in the study.

Permission to conduct the study and access study participants was also granted from the Dean of each of the Colleges included in the study. Students were informed that they could choose to withdraw from the study at any time without consequences, with the confidentiality of the participants' identities maintained through the data collection process. The interviews were recorded with the knowledge and consent of participants and subsequently transcribed verbatim. The recording session was saved on a USB and kept with the researcher, with a completely confidential and anonymous manner in compliance with the General Data Protection Regulatory (GDPR) requirements (Information Commissioner's Office, 2018).

2.6 | Data analysis

Computer-assisted qualitative data analysis packages enable qualitative data to be sorted and organized more easily. In qualitative data analysis, NVivo is one of the most common and flexible software packages. Therefore, interview transcripts were uploaded into NVivo 12 for coding.

The interviews were coded to differentiate between various schools at the selected universities. To analyse qualitative data, a broad range of analytic methods can be adopted (e.g., interpretative phenomenological analysis (IPA), discourse analysis, grounded theory, thematic analysis) (Creswell & Clark, 2007). The current study was analysed using Braun and Clarke's thematic analysis method.

3 | RESULTS

The semi-structured interview transcripts were analysed (more than 500 min of interviews). The current study identified 20 codes, which then were categorised under four main themes and 12 subthemes as shown (Table 2). Thematic analysis by Braun and Clarke (2006) are presented here to help identify patterns and themes within our qualitative data. The goal of our thematic analyses was to identify themes which were related to factors affecting CE use, cognitive effect, pattern of behaviours and the designing a drug awareness campaign. Table 2 outlines the final themes and subthemes which emerged from the analyses of the collected qualitative data.

3.1 | Theme (1): Factors affecting CE use

The first theme that emerged from the interview responses based on the participants' descriptions of their experiences with CE use with many participants reporting how social norms were a major influence. This theme comprised four subthemes: awareness and social acceptability, accessibility and affordability, perceptions about safety and the Covid-19 pandemic effects. The first theme can answer the first research question of the qualitative study: 'What are the factors influencing CE use among university students in the UAE?'

3.1.1 | Awareness and social acceptability

Students were asked if they were aware of the use of CEs and whether they accepted their use. Only one was unaware of their use. The majority of the participants ($n = 17$) stated that they were aware and/or have heard about CEs, again, here one half of the students ($n = 9$) that were interviewed accepted the use of CEs.

TABLE 2 Four main themes and subthemes among university students ($N = 18$).

Themes	Subthemes
1) Factors affecting CEs use	Awareness and social acceptability
	Accessibility and affordability
	Perceptions about safety
	COVID-19 pandemic effects
2) Cognitive effects	Negative effects
	Positive effects
	A requirement for academic work
3) Patterns of behaviours	Motivation
	Intention to use CEs post university studies
	Pressure & stress
4) Recommendation to intervention	Lack of knowledge
	The need for an intervention

Some students talked about the awareness and familiarity of CE among adult students:

> YES, I have heard about the CEs, and I'm sure majority of student are aware about it too (N2).

However, some students spoke about the positive impacts and benefits of using CE.

> I have heard of them from my friends, they talk about this frequently and its benefit (U1)

Furthermore, it was described that the drug "Adderall" seemed a popular one, especially for participant U6 who said that he knew:

> The famous one is Adderall (U6)

Some of the interviewees acknowledged that they would rather rely on good lifestyle such as having enough hours of sleep and a balanced diet rather than taking CEs.

> Most of our students are still young, they need to get eight hours of sleep at night, if they eat healthy food and eat nuts and making exercise. If they feed their brain well like reading books or playing games like chess that keeps their brain alive. I don't think they would really require cognitive enhancers unless there's a compelling reason (N4).

3.1.2 | Accessibility and affordability

According to the students' responses, there was high peer pressure at the university that drives them to use CEs. Some participants started using CEs just to conform with the students' community who are already CE users. If students see their peers achieving better academically, they easily succumb into substance use. This was evidenced by participants who elaborated:

> Actually, my friend gave me a few pills that were purchased online, he used it and it helped (U1)

Despite an ongoing debate about the benefits associated with CEs, an additional component contributing to the acceptability of CE drugs was students' views over the morality. Concerned about the ethics of their use and thinking it was unfair and cheating to take the drugs, one of the students said:

> I think people should just be studying without taking any pharmacological booster, because it would be unfair and I think it considers a cheating, like other people who put in the effort and work without the drugs,

> comparing it's not fair and its indirect way of cheating (N6)

Some participants thought the price to buy the CEs was reasonable and affordable and couple of students added:

> In terms of the price they are reasonable as not expensive (U2)

The accessibility of CE drugs/substances was another important factor in determining their usage. Most students obtained their supply of prescription medicines illegally, participants offered to describe the ways they obtained CEs. The most noted responses here was through purchasing online, student stated:

> I order them online, it's very simple (U1)

Furthermore, several participants reported that some individuals can obtain their CEs by relying on illegal channels through friends, or family, faking an attention deficit hyperactivity disorder (ADHD) diagnosis at the psychiatric clinic, or by online source prescription from a psychiatrist. Some individuals find it easy to get a prescription from a doctor, especially if they know them personally.

> Yeah, some people know the doctor (laugh) and get the drug prescription (N1)

> I decided to go to a psychiatrist complaining about how I feel that I'm no longer capable or able to follow up with my studies in medical school. I have prescribed Piracetam. (U6)

Accessibility had seemed here easy through friends/peers too. Other students generally reported that they obtained their CEs through a peer or friend that obtained prescription stimulants from a peer with a prescription, who shared their medication.

> My friend gave me a few pills that she purchased online' (U1)

3.1.3 | Perception about safety

One of the main factors influencing students' intentions to use cognitive enhancers was their perceptions of their legitimacy and safety. Some have benefited from CEs and used them with no worries, considering that the use of CEs is safe because these drugs are government-regulated, created in clean labs and manufactured under Good Manufacturing Practice (GMP), prescribed by medical professionals (Gouveia et al., 2015), and dispensed with appropriate labels that have directions for use and administration. Some participants explained:

> I think it's beneficial, and I know lots of people take them so why will I be worried (U1).

Despite knowing that these medicines are associated with risks of dependence, addiction and use disorders, some students thought they could manage their use. Another participant reported that there would be no problem with using CEs only when needed and said that it would not cause addiction:

> It would help, but the problem with these drugs that maybe addiction can come, like for example with amphetamine. So, taking them only during the exams or so I don't see it a problem, you should be carefully when using it (U3).

In contrast, other participants reported that they avoid CEs because they are aware of the side-effects and associated health risks like addiction. Here students stated the following:

> Yes, it is the side effect, it's exactly why I avoid them. I'm a little prone to like anxiety. I'm able to be in nursing without drugs and I'm coping well (N1)

3.1.4 | COVID-19 pandemic effects

Another subtheme identified how the COVID-19 pandemic caused stress and challenge for students to study online. The anxiety that students experienced not only came from the threats of COVID-19 itself, but also from social and physical restrictions, lack of familiarity with new learning platforms and technical issues. Based on participants' responses, several reasons for promoting the use of CE drugs, were here identified:

> COVID pandemic and the lockdown caused anxiety to most of us, like being wrapped up in the same place in our room, all the time. This is where you study, this is where you sleep everything is restricted and the unfamiliarity with online learning, and when you don't get to meet your own friends. All that accumulated in our minds. Honestly, therefore I started taking Adderall as a cognitive enhancer to keep me motivated to study and boost my cognition (U3)

Another participant, who did not use CEs explained the reasons which supported using CEs during the Covid-19 pandemic, stated:

> We are going through very immense stress now, the COVID pandemic is stressing almost everyone, online learning it's not easy for a medical student, not only that, but the stress also that you don't know how long it's going to last, itself is the catastrophe. So, that itself

> is a reason which could lead students like medical students to use cognitive enhancers pills (N6)

3.2 | Theme (2): Cognitive effects

The second theme in our qualitative analyses related to the effects that participants experienced when using CEs. The majority reported the positive effects of CEs and hence, justified the need for CE use. However, there were also a few negative effects experienced by participants. The second theme comprised three sub-themes: 1. Negative effects, 2. Positive effects and 3. A requirement for academic work. This theme could answer the second research question in this qualitative study: '*What impact do students who use CEs have on the views and behaviours of non-users?*'

3.2.1 | Negative effects

Participants who were non-users of CEs acknowledged that there could be health risks that CE drugs could pose, using them without a prescription is illegal and can lead to unwanted side-effects, such as increased both anxiety and heart rate or even cause addiction.

> Well, I think it's not good decision for a healthy individual to use these things because it definitely can be harmful and lead to a bad effect like increased anxiety, even in a long term (N3)

3.2.2 | Positive effects

The vast majority of participants described their experiences, reported how they benefited from taking CEs and how it helped with keeping them alert and focus during their examination, they said:

> Yes, it really helped. It makes me alert all night during examination (U1).

3.2.3 | Requirement for academic work

Participants in this sub-theme reported their need of CE drugs during their exam period and when they are submitting coursework, and stated:

> Um, I mean it's a weapon with two ends like they say, it can absolutely be good for people that need it, with academic load sometimes we need anything to boost our cognition, we need to concentrate and stay awake specifically during exams and submitting work, its medicine school my dear (U6).

3.3 | Theme (3): Patterns of behaviour

The third theme that emerged from the interviews related to patterns of behaviour with CE use among university students in the UAE. Socially, students become more independent; some students leave their families to go to university, which could cause feelings of loneliness and nostalgia; increased influence and pressure of their university peers, such as test scores, career choice and so on. Academically, students need to process large amounts of study material for themselves, may face performance and assessment pressures, and experience new levels of competition.

Three key subthemes emerged from the analysis. This included motivation, intention to use CEs post-University studies and pressure and stress that causes participants' use of CEs. During the interviews, participants also discussed further about the reason for using CEs and whether they have the intension of using them in the future. This theme can help answer the third research question for the qualitative study: '*What are the reasons and justifications reported by UAE University students for using/not using CEs?*' Three key subthemes that emerged from the analysis are as follows.

3.3.1 | Motivation

The interviews showed that participants were motivated with an interest in using CEs. Based on some participants, they were certain that CEs had kept them alert with high levels of concentration, and stated:

> It would help, I know that some of them can work, for example, increasing the adrenalin in the body to keep you alert and awake or increasing the dopamine levels in the body (U3)

3.3.2 | Intention to use CEs post-university studies

After discussing the motivation of CE use and academic pressure, participants were asked about their intention to use CEs in the future. Concerningly, most CE users reported that they were intending to use CEs in future, stating the following:

> Yeah. I would take it for sure, just because I want to stay concentrated and boost up knowledge faster (laugh) (U2)

Some participants that had not tried CEs in the past were not certain that they would avoid them in the future

> Not sure as everything has advantages and disadvantages (N2)

3.3.3 | Pressure and stress

When students join the university, they go through stressful conditions related to adapting to a different environment, new academic roles, and their commitment to their family, as it has been found that psychological symptoms, including stress, were commonly manifested among students, another stress-inducing factor is the highly competitive educational environment. Some respondents explained that students could be involved in CE use to cope with these types of stressful conditions, as said:

> I work so hard to make my family proud of me, we go through very stressful, the fees are so much, and my family are paying so much money, all this accumulate a big stress (U1).

Other participants reported how they were coping with educational or social stress without using CEs, and shared options for safer CEs or recommended alternative coping strategies. Among others, they recommended a good night's sleep, a balanced diet, exercise.

> Get away from the stress or anything that makes you feel pressurised or feeling stressed, just concentrate on the positive thing because whenever you just think of the positive things, your brain mentally or gradually will be working and functioning well (N3)

3.4 | Theme (4): Recommendations and interventions

The fourth, and the last theme from the qualitative analyses, indicated that while some students were aware of the potency of CE drugs/substances, they still used them without a doctor's prescription. There are two sub-themes that emerged from this theme which are participants' lack of knowledge about the harm of CE use and students' recommendation of guidance in the university. Most of the participants commented that there was a lack of knowledge in providing information regarding CE misuse and they think that orientation would be an important option that can be undertaken at the institutional level as there was no guidance available in the university about this issue. As a result, recommendations for proposed intervention are discussed in the following sub-themes.

3.4.1 | Lack of knowledge about the harm of CE

According to the participants' responses it shows that no intervention to educate students about the harm of CE use had been carried out in their institutions before and, there was lack of knowledge about the harm of CEs drugs/substances use; somebody said:

> No intervention regarding cognitive enhancers drugs in the uni. Some of our students are lacking the knowledge about the harm of CEs. There is no advice from our staff in regards that, all they do is stressing us with exams (laugh) (U1)

However, another participant who did not use CEs, she believed that the lack of correct knowledge was one of the main reasons for using CEs; she said:

> There's lack of knowledge skills about the harm of cognitive enhancers in general (N1)

In contrast, another user of CEs talked positively about the importance of CEs in improving students' cognition and making their study easier, he said:

> Students are not educated about the misuse of the drugs which they think can boost them up or can improve their cognition. It's very important to educate them, they are lacking knowledge (U6)

3.4.2 | The need for an intervention

Most of the participants here have provided a range of rich information regarding the need of an intervention within the University. Interesting statements from non-users as well as those who use CEs are shown below. A participant who used CEs provided some recommendations from his experiences, and said:

> I think it's very important recommendation to the university (U1)

Other students who did not use CEs were unaware of any intervention programme to educate students about the negative impact of using CEs:

> No there is no intervention but trust me I think they should organise such a thing we need it (N1).

4 | TEACHING FACULTY STAFF INTERVIEW (PART II)

It is important to investigate any phenomenon through various perspectives, thus, the researcher was interested to add to the views of students about using CE those of the teaching faculty staff to get more than one source for the data which was collected through interviewing students and their lecturers.

4.1 | Aim

The aim of this part of the study is to explore the nature of CE use among students and the reasons behind it from a lecturer's perspective.

4.2 | Research question

What are the factors that professionals contribute towards the use of cognitive enhancers (CEs) among university students?

4.3 | Sample

A purposive sample was chosen via telephone contact, and a date was arranged for interviews with a member from each of the seven teaching faculties (Table 3) from six institutions in UAE. Four of these selected participants were males and the remaining three were females.

4.4 | Methods

A qualitative study design was conducted among teaching faculties from the same universities that were selected in (Part I), by arranging voice calls via the 'Zoom' platform and the researcher led the discussions. An email of invitation and a study information sheet was sent to the teaching faculty members that took part in teaching students. Telephone contact was then made, and a date was arranged for interviews with seven teaching faculty staff from six institutions in UAE. Teaching faculty staff were given the option to be interviewed in English or Arabic. All participants chose to communicate in English, for that reason, the interviews were carried out with faculty staff in the English language. The participants could be categorised into one of three groups: (1) absolute denial of CE use among students (P1, P3, P5); (2) denial of CE use among students in the university, but reports seeing CE use elsewhere (P4, P7); (3) reporting CE use among students in the university (P2, P6). Demographic data were collected from all participants (Table 1).

The interviews were recorded with the knowledge and consent of participants and subsequently transcribed verbatim. The recording session was saved on a USB and kept with the researcher, with a completely confidential and anonymous manner in compliance with the General Data Protection Regulatory (GDPR) requirements (Information Commissioner's Office, 2018).

4.5 | Results

The interviews were transcribed by the researcher, then uploaded into NVivo 12 for coding. The interviews were coded to differentiate between various schools at the selected universities. The interview data were analysed using the six-stage process of thematic analysis (TA) outlined by (Braun & Clarke, 2006). Thematic analysis used to analyse and report repeated patterns of themes in several ways within the data (Braun & Clarke, 2013). The results analysed from the seven university lecturers consist of three main themes and their five sub-themes, as shown in Table 4. These themes represented the attitude of university lecturers and their perception towards CEs, in addition to their views about initiating a drug awareness campaign against using CEs among University students.

4.5.1 | Theme 1. Teaching staff attitudes and general behaviours

During this second phase of the qualitative analysis, the first theme explored the attitudes of university faculty staff (pharmacy and medicine) toward CE use among students. In this study, three sub-

TABLE 3 Demography of the participants ($N = 7$).

Participants	Gender	College	Years of working in their current institution
1 (AD1)	Male	Medicine (Physiology)	4 years
2 (R1)	Male	Student affairs (Physical Education)	12 years
3 (AD2)	Male	Pharmacy (Pharmacology)	11 years
4 (D1)	Female	Medicine (Internal medicine)	6 years
5 (AD3)	Female	Pharmacy	8 years
6 (R2)	Female	Pharmacy (Pharmacology)	10 years
7 (D2)	Male	Medicine (Psychiatric)	14 years

Abbreviations: AD, Absolute denial of CE use; D, Denies CE use in university but reports seeing CE use elsewhere; R, Reports CE use in the university.

TABLE 4 Faculty interview themes.

Themes	Subthemes
1. Teaching staff attitudes and general behaviours	1. Moral attitude
	2. Students' behaviour patterns and stress
	3. Peer effect
2. Perception of CE use	1. Professionals' personal experience with CEs
	2. Placebo effect
3. Raising a campaign	

themes are discussed (professionals' moral attitudes towards CEs, students' behaviour patterns & stress, and peer effects).

Moral attitudes

Surprisingly, most teaching faculty academics strongly disagreed with the fact that their students misused any drugs including CE drugs because they are aware of the side effects, and it is morally unacceptable in UAE because they are future healthcare practitioners. One teaching faculty member believed it is not ethically acceptable for students to use CEs for any reason, and stated:

> I doubt here in the UAE things like that can happen. I can't say all our students are perfect but no news about addiction, in general, has never reported in our university before. **Ethically not accepted**, they are our future healthcare practitioners, and aware of the side effects of using a drug that is not prescribed to them (AD1)

Another teaching faculty member was hugely surprised that students and especially medical students use CEs; she said:

> No. nothing like that I came across off, **how can they do that?! they are the future doctors**. I strongly think that our students would not misuse CEs for any reasons (D1)

In contrast, one participant did not give a view on the morality of CE use. The participant who works in Student Affairs and has a close interaction with students made this point more strongly and acknowledged that some students do use CEs during exams to boost their cognition and keep them alert, as he said:

> Yes, I'm aware, because of my job nature of being a part of the Student Affairs. I have direct and close contact with students. Literally from the informal way of discussion, students shared their experience about their use of cognitive enhancers drugs and substance pills for the purpose of improving performances and concentration (R1)

Students' behaviour patterns and stress

Positive student behaviour was reported by the participants, as follows:

> I know students here they are working so hard to get the academic discount because if they get a high score, they can get a good discount. So, yeah, they have some financial challenges, as well as social challenges to get any higher scores, I can say a positive behaviour changes in which they make good peers, making exercises improving their lifestyle (AD3).

The stress and tiredness expressed by students, especially medical students, impacted badly on their voluntary physical activity (PE) sessions that they used to attend to relieve their stress. Another teaching faculty member was concerned that these students seem to be easily tired, as he said:

> During exams students specifically medicine students, come to the PE session very tired, and can't enjoy their exercise because they didn't sleep for the whole night to study. That is a case of concern (R1)

Peer effects

Peer pressure was an important factor in the study in which students could be influenced by their friends on CE use behaviour. This subtheme showed the relationship and found that even non-users could be influenced by CE using peers and could become more knowledgeable about the effects of these drugs. This knowledge may lead to an increased risk of future substance use for studying purposes in cases where students become interested in seeking positive effects experienced by their friends. Participant 2 added that students were motivated to try CEs out of curiosity, as they belonged to peers who were using these drugs. Reassured by their peers' positive experiences, and the expectations of knowledge to CEs were mainly formed from the experiences of peers' already using these drugs. Moreover, these students were not concerned about the consequences of negative outcomes and detrimental side effects:

> being in a medical field is not easy we all agree on that, and friends have a major effect on each other means that some of them copy each other, whatever one does the other get influenced. But again, what I always hear from them is the stress they face from their family that they need to get a high percentage so they can claim the discount towards the fees (R1)

> I advise students to interact with good peers, share knowledge and study together that can help them to be more motivated as I'm so sure that friends influence each other (AD3)

4.5.2 | Theme (2): Faculty staff' perception of CEs uses among students

The second theme was to emphasis the professional's personal experience of using CEs, placebo effect and the importance of a drug awareness campaign in the universities.

Personal experience with CEs

Interestingly, some staff described their own experience of CE use when they were medical students in their countries stating the following:

> Back when I was medical student in Iraq, we used to share the substance (Gingko biloba) during exam times only to make us alert, as we needed to be more conscious, we all needed anything to be mentally concentrated and focused (D1)

Placebo effect

Interestingly, participant 7 was ambivalent about whether he believed that the use of CEs by students was common at university and acknowledged the possibility of a "placebo effect." He explained that CEs did not actually change the way students thought, or that they make them more concentrated or focused on their tasks but they did give them the feeling of enjoyment. In this sense, it can be stated that CEs provide an experience that in general is rewarding for the user at both a cognitive and an affective level.

As would be expected, participants who described the placebo as pleasurable, tended to seek an intense, potentiated effect, and engaged in habitual use of CEs:

> Very good. The good thing to hear was a student's coming back to with this big smile and telling me how he felt more focused and concentrated while studying (lots of laughter).

> I'm supported to give Placebo because if the placebo works well WHY not even giving it (D2)

Another teaching faculty member commented on the placebo effect:

> In fact, I think Physicians may use placebos to students as a cognitive enhancer, the placebo effect may underlie positive outcomes (R2)

4.5.3 | Theme (3): Raising a campaign

In this theme, it shows that some faculty members had open discussions on the topic of misusing a drug in general but that did not occur very often:

> I never done that myself maybe Student Affairs staff in the university might be arranging things like that, but we didn't arrange as such a campaign before (AD1)

One staff participant believed that students were facing important challenges in order to deal with stress without using CEs, as he said:

> Yes, but not a proper intervention but I advise them always about how they shouldn't use any substances and/or drugs for any reason. I have had sent them a power point by mail several times about the misuse of drugs in general, it's very important, I think. Students are in a high risk to do anything to reduce their studying stress. They need to be more educated on the long-term effect that the dug could cause (R1).

Another teaching faculty member was concerned about the absence of any intervention that can increase the awareness of the damage of CEs on students, especially the long-term impact:

> In our university I haven't heard of an intervention about the misuse of CEs drugs, but I always give advices to students that to enhance their concentration without drugs, they need to fix their sleeping pattern, that has effect on memory because most of our memories occur during our sleep and most of the information we are reading solidify during the sleep so if you sleeping is disturbed, all the information you take it will not be stored nicely in your brain. In general, I welcome the idea of the campaign well done (D2)

In contrast to others, some participants stated that initiating an intervention would have a negative impact on students. In this subtheme of analysis, it was found that some teaching faculties did not consider the discussion on the misuse of CE drugs, as that could increase the awareness of CEs among those who have no knowledge about it:

> No, I don't think so, I haven't come across that we usually do orientation regarding misuse of drugs in general, but I think we've never done, such an orientation on cognitive enhancers drugs. I think we should not raise the campaign on the misuse of a drugs that enhances cognition because we might increase the awareness of students about the use of cognitive enhancers No, I think it's wrong some have no knowledge about that and once they hear that there is something that could make you smart even if it's dangerous, they will try I think it's my opinion only (AD2).

5 | DISCUSSION

This study aimed to explore in further detail the survey findings (Sharif et al., 2022), to provide an in-depth understanding of the reasons why university students in the UAE use CE drugs from students and teaching faculty's perspectives. Despite ambiguity around effects and definitions, several studies have looked at the increasing prevalence of CE drug use worldwide, especially among university student populations and with a focus on stimulants.

This is the first qualitative study to carry out an in-depth interview on the perception, behaviour and attitude regarding cognitive enhancers use in Gulf countries including the UAE among university students. It emphasised the increased use of pharmacological CEs illicitly by healthy university students aged 18–25 to gain an academic advantage. In this study we have outlined the interview structure, style, setting and recording the data to answer the research questions and to explore the results that were obtained from the quantitative survey study (Sharif et al., 2022). The study was conducted in six Universities in the UAE that are known for competitive college acceptance. Out of 18 student respondents who have been interviewed in Part I, nine indicated that they used CE (licit and illicit) drugs and all but one of the participants ($n = 17$) were aware or had heard about CEs, the staff faculty in (Part II) strongly disagreed with the fact that there are university students who use CEs for cognitive enhancement. The findings from Part I of the study showed that out of 18 students, nine reported that they tried taking CEs and when asked about their motivations for CE use, participants chiefly referred to the expected improved academic performance mainly associated with a better memory and focus. This finding aligned with previous qualitative studies that explored university students' experiences on CE for academic purposes (McDermott et al., 2020; Monnet et al., 2021). Similarly, several studies found that students who used CEs thought that they could benefit from its use in improving their focus and concertation and reducing the level of anxiety and stress in particular among adult students (Maier et al., 2015; Plumber et al., 2021; Repantis et al., 2010).

Greely et al. (2008) reported that some University students worldwide sell and buy CEs in promoting opportunities of getting higher academic achievement. These transactions mostly include drugs like Ritalin and Adderall, which make these transactions illegal, and in turn increases criminal activities. Unfortunately, the use of CEs is a common issue which has become widespread among healthy individuals, and in particular, students who believe in the importance of using CEs to get better academic achievement and reduce the exam stress.

The use of CEs among university students in the UK and Ireland has been estimated to be around 10% (Singh et al., 2014); with US University students reaching 8.3% (Teter et al., 2006); and 6.5% among Australian university students (Lucke et al., 2018); and 5%–30% of students in Canada reported the use of CEs (London-Nadeau et al., 2019). Research reported that the spread of CE use is increasing year-on-year in the US, which is an alarming indicator for society figures that should encourage them to stand firmly against it (Greely et al., 2008; Lucke et al., 2018). Moreover, some university students believe that using CEs gives them an opportunity to increase and improve the quality of their studies and academic achievement (Ragan et al., 2013; Volkow et al., 2008) and Shakeel et al. (2021) also added that CEs can make the purpose of study. The current qualitative study showed that the most common prescribed drugs used among students in (Part I) was 'Adderall' and for non-prescribed drugs it was caffeine supper strength pills, which is aligned with previous studies (Sharif et al., 2022). However, there has been no exact data or previous studies that reported the prevalence misuse of CEs in UAE, it only indicated that 86% of male and female students in Zayed University (UAE) showed a positive attitude towards coffee consumption as a CE (Ghali et al., 2016). Several studies show a concerning increase in the use CEs among adult students in an attempt to improve academic achievement (e.g., Monnet et al., 2021; Narayanan et al., 2021; Shakeel et al., 2021).

Surprisingly in Part II of the study, most of the teaching faculty staff responded that CE use among their students is not common and that there are no behavioural problems that could be related to fear of disrupting the university. These findings are consistent with those reported by (Ram et al., 2020).

An awareness of CEs and the potential benefits of such stimulants were central in determining their use among students. The majority of our participants in both (Part I and II) reported that peer influence was highly influential in terms of their uptake of the CE, which is in a line with a previous qualitative study that was carried out in the UK (McDermott et al., 2020). Part I findings indicates that students who use CEs believe that the drugs are safer than those who are non-users, and that users more strongly believe that they know enough about the drugs to use them safely. Students have expressed belief in the safety of CEs as the drugs are prescribed medication, street drugs, and are safe because they have gone through extensive testing by pharmaceutical companies and are prescribed by medical professionals. These results are in line with another study (Nguyen et al., 2021; Ram et al., 2020). However, researchers have voiced their concerns about university students' use of CEs under false consideration that CEs have a positive impact rather than a negative one in their personal and academic life, this means those adult students are at a high risk (Greely et al., 2008; Lucke et al., 2018).

A relevant factor that was identified in the study was the lack of awareness of the health risks associated with CE use in universities. For this reason, the current study is very important to allow the UAE and other Arab countries to show the risk of using cognitive enhancers (CE), it is essential to provide knowledge and information supported with research evidence to university students in an attractive and gentle way to ensure these students review their information about the false benefit and risks of using CE (Sharif et al., 2022).

Another suggestion was to run campaigns for improving students' confidence and making the coursework more enjoyable. Universities might also include general and introductory educational sessions on the dangers of CE use, side effects, and options to seek

help (Abelman, 2017). It is important to initiate drug awareness campaigns among students to increase understanding of the risks and harms caused by using CEs, especially in the long term. Research indicates the need to address this issue, given the myths common among university students that using CEs can increase academic achievement (Colagiuri & Boakes, 2010). On the other hand, concerns have been expressed regarding how adult students believe unapproved information about the benefit of CE use which is not supported by clinical evidence (Napoletano et al., 2020).

There are serious ethical and legal issues involved in the non-medical use of any psychotropic, with nootropics potentially causing major public health problems (Schifano et al., 2022). The use of cognitive enhancers among university students has been identified as a public health issue (Benson et al., 2015). The outcome of the semi-structured interviews and the thematic analysis was to discuss the importance of the intervention programme from the opinions of the students.

The current interview study findings highlighted that peer influence had an effect, that including participants' awareness and ease of availability by sharing the drugs, as well as greater acceptance of use of CEs within students in UAE Universities. Similarly, Javed et al. (2019) conducted a study among 27 participants in Pakistan which provided evidence that one of the CE drugs helped to improve the concentration of these students. This study reported that the student's peers showed significant impact on the usage of CE and its spread (Javed et al., 2019).

A recommendation given in the academic literature on dealing with and/or preventing CE use among students (Abelman, 2017) is to provide systems that reduce **peer pressure** and stigma by advising students against sharing medication. It evident that the impact of peers on university students is significant and can influence the use of CEs. Hence, it is important that universities provide CE risk awareness activities that are relevant and appealing to students.

Systematic reviews of the relationship between peer pressure and alcohol consumption (Borsari & Carey, 2001) and cigarette smoking (Mpousiou et al., 2018), have primarily focused on adolescents and college and university students; however, peer pressure perceptions may persist as students get older. The concept of peer pressure is particularly relevant when an individual is trying to change his or her past alcohol consumption behaviour, going against established norms and behavioural patterns (Morris et al., 2020). The peer pressure that led to this higher cigarette smoking rate among students was an important factor and predicts more substance use among students than parental influence. They assert peers influence adolescent substance use in a stronger and more direct way than parents (Mpousiou et al., 2018).

The findings from Part I of this study show that compared to non-users, CE users more commonly perceive CE drugs as safe, and that users strongly believe that they know enough about the drugs to use them safely. These results are in line with those of another study (Nguyen et al., 2021). Furthermore, most non-users seemed to be resilient despite the views and behaviours of CE users. Non-users made a strong case against CE use by using alternative strategies such as maintaining a good lifestyle by having sufficient hours of sleep and a balanced diet rather than taking CEs drugs, using ethical arguments and by being concerned about the negative effects.

Thus, not all non-users of CE will be completely against them, and this can happen for various reasons, these participants seem to not be fully convinced about the positive and negative effects of CE use. Although some teaching staff denied any problem of CE misuse among students, half of the students admitted to using CEs with the good intentions of improving their focus and dealing with exam-related stress in order to increase their academic achievement. Also, it is noticeable through what the students said in their interviews that they did not feel ashamed, and some of them were pleased that they found these CE to help them in their studies. By contrast, some teaching staff were less convinced about the effects of peer pressure (Part II). However, the current researcher agrees with Abelman (2017) who reported the essential role of peers in terms of their impact on the student's attitude towards CEs.

Interestingly, one of the professionals in part II, believed that the use of CEs by students was common at university and acknowledged the possibility of a "placebo effect." Among the studies utilising placebo pills to manipulate performance expectation, only a few studies (Looby & Earleywine, 2011) have directly addressed whether placebo administration is effective in inducing cognitive enhancement measured subjectively and objectively. The participants' assumption that the placebo was methylphenidate enhanced subjective arousal, but not actual cognitive performance (Looby & Earleywine, 2011). By contrast, other studies have reported a placebo effect on objective measures of cognitive performance in healthy individuals; taking a placebo pill enhanced memory and attention performance in comparison to a no pills control condition (Oken et al., 2008). Interestingly, expectancy of improvement and actual improvement of cognitive performance were associated (Oken et al., 2008). A study by Colagiuri and Boakes (2010) on a double-blind randomised-controlled experiment among university students reported that the participants who believed they had been allocated to the cognitive enhancing drug, due to false (positive) feedback given about their cognitive performance, performed better than those who believed they had been given a placebo (Colagiuri & Boakes, 2010). A recent systematic literature review by Plumber et al. (2021), reported that CEs are often used to increase focus for academic purpose. Taking these results into consideration, they recommended for future research to look for possible placebo effects with the use of Adderall in healthy brains as students using them for cognitive enhancement might feel motivated because they are simply taking a stimulant known to improve focus (Plumber et al., 2021).

The outcome of the semi-structured interviews and the related thematic analysis was to discuss the importance of the intervention programme from the opinions of students. The University environment should allow enough space to promote educational processes and articulates social and health public policies. Also, the current study showed that some of these teaching faculty 'educators' do not put enough effort into discussing the use of CEs with students as part

of their work, and they certainly did not believe that student CE use is a responsibility or priority of the university or faculty. It is vital to develop effective and suitable intervention programmes to provide University students with the correct knowledge.

Therefore, both students and teaching staff should cooperate in developing good intervention programmes which can empower students with the required skills about healthy and safe actions towards the use of CEs. In addition, actions need to be raised and carried out such as in lectures, workshops or by giving leaflets and videos all that can be carried out by the teaching faculties as part of their duties. Continuing professional development could play an important role in addressing the knowledge and attitudes of faculty staff regarding student CE use.

Our study showed that some of these educators did not regard discussing the use of CEs with students as part of their work, and they certainly did not see addressing student CE use as a responsibility of the university. The main factor that was identified in our study is the lack of awareness to address the dangers of CEs usage in university field. In addition, actions need to be raised such as lectures, workshops, giving leaflets and videos. All that can be carried out by the teaching staff during their duties. Results also show that educators realise the need for their own training to work in an interdisciplinary way with this issue, therefore, not only directed to their own performances, but also concerning support networks and legislation on CEs and drugs in general. A view expressed in the academic literature is that staff can deal with and/or prevent CE use among students (Abelman, 2017) by providing systems that reduce peer pressure and stigma and advising students to not share medication.

In the context of international research, the results of this study contribute to the understanding of underlying causes of the use of CE drugs for academic purposes. The university environment must be understood as a space which promotes educational processes and articulates social and health public policies, and campaigning regarding drug awareness.

6 | CONCLUSIONS

The objective of the semi-structured interviews and the thematic analysis was to explore the importance of the intervention programme from the opinions of the students. The study showed that students indicate high levels of stress and workload as a justification for the use of cognitive enhancers while also acknowledging the stress they face to get high grades to get the discount towards the fees values that lead the students in UAE university as the reason for practices related to CE use.

As part of our study, we investigated the perceptions and experiences of university students in UAE toward CE drugs and substances. Although our findings cannot be generalized to the student population in UAE, our study provides more insight into the uses of cognitive enhancers and their impact on the lives of students who access and repurpose CE in academic settings. The use of CE can have two main sides of use, it can be well used and provide good benefits, or it can cause problems, risks, and damage (Greely, et al., 2008). Our study showed that some healthy students attempt to use stimulants CE drugs to improve their quality of life.

The study concluded that the prevalence of CEs was updated, and it was shown that their use has increased significantly among UAE students. Additionally, motivational factors and facilitators behind cognitive enhancer use were investigated, filling gap in subsequently providing an understanding of actors influencing their use. In order to reduce the use of cognitive enhancers drugs among their students, universities need to increase their awareness of their prevalence. Researchers in UAE should be interested in this research because students may be increasingly using stimulants for cognitive enhancement, and the reasons behind this should be addressed by both academic staff and students' welfare service, the use of smart drugs among students is a complex issue that requires further attention and research. The findings from Arabic countries provide valuable insights into this phenomenon and contribute to the international understanding of the issue.

7 | LIMITATIONS

The main limitation was the use of online interviews rather than face-to-face which prevented the researcher building a better rapport with the participants. Due to the COVID-19 pandemic, the results of this study may not be generalisable to a larger population of university faculty staff. This study discussed major challenges, namely time constraints and physical distance, both of which directly affected faculty staff and students.

AUTHOR CONTRIBUTIONS

All the authors equally contributed to the initial planning of the data collection; Safia Sharif drafted the paper itself. Amira Guirguis, Suzanne Fergus, Nigel Smeeton, and Fabrizio Schifano critically reviewed the final draft prior to submission. Nigel Smeeton advised on and reviewed the quantitative aspects. All authors have read and agreed to the published version of the manuscript.

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CONFLICT OF INTEREST STATEMENT

Fabrizio Schifano was a previous (2011–2019) member of the ACMD UK; he is currently a member of the European Medicines Agency (EMA) Psychiatry Advisory Board. Safia Sharif, Amira Guirguis, Suzanne Fergus, and Nigel Smeeton have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

Transcript interviews were imported into NVivo, where the themes and subthemes were selected since it was an anonymous study; the recordings were kept exclusively by the first author (Safia Sharif).

ORCID

Amira Guirguis https://orcid.org/0000-0001-8255-0660

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