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Use of mobile phones to buy and sell illicit drugs

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Abstract | This study explores how police detainees in Australia use mobile phones within the illicit drug market. Fifty-nine percent of respondents had used mobile phones to buy, deliver or supply drugs, mainly through phone calls, text messages or messaging apps. Detainees who had used apps for drug buying or supplying were on average significantly younger than those using other phone-based services for drug buying or supplying. Drug suppliers were significantly more likely than drug buyers to have used messaging apps. Respondents used messaging apps for convenience and to conceal their activities. Almost 50 percent of drug suppliers report having stopped using mobile phones because of law enforcement's ability to intercept communications.

Communications technology has had an evolving role in drug markets in Australia and elsewhere. In the 1990s and earlier, beepers and pagers enabled drug distributors to communicate as they moved between sellers and wholesale sources, while payphones provided a method of communication for sellers working in public places (Natarajan, Clarke & Johnson 1995). The rise of mobile phone use enabled more immediate and convenient ways to arrange drug transactions. Mobile phones also provided drug market participants with the means to convey information to others about localised law enforcement activity. Recent improvements to information and communications technology have provided even more sophisticated ways to avoid detection by law enforcement.

One notable example of this technology is encrypted communication—the conversion of information into a code, especially to prevent unauthorised access. Encrypted communication services include fully-encrypted devices, such as a BlackBerry phone, and instant messaging applications or 'apps' such as Wickr, WhatsApp and Facebook Messenger. When both sender and receiver use the same encrypted messaging app, the app converts text messages, audio calls, videos and photographs to a code that only the intended recipient can decrypt. The widespread use of online social media platforms such as Instagram and Snapchat has also provided convenient and immediate ways to supply and access drugs (Demant et al. 2019; Moyle et al. 2019). A recent study of the use of smartphone-enabled social media and encrypted messaging apps to source drugs found the technology provided participants with convenience, immediacy, access to a range of substances and perceived security (Moyle et al. 2019).

The development and growth of these technologies are increasingly testing Australia's communications laws, many of which were created before the proliferation of mobile devices, international service providers and encrypted communications (Parliamentary Joint Committee on Law Enforcement 2019). Law enforcement agencies have also documented the effects encrypted communications have had on their capacity to conduct investigations into organised crime (New South Wales Crime Commission 2019; Parliamentary Joint Committee on Law Enforcement 2019). The rollout of the 5G mobile network may create further complex challenges for law enforcement agencies (Townsend 2019). In the face of rapidly developing and proliferating telecommunications technology, the Australian Parliament passed the *Assistance and Access Act 2018* (Worthington & Bogle 2018). The purpose of this law is to provide law enforcement and security agencies with lawful access to telecommunications. The law allows these agencies to seek help from the communications industry and strengthens their ability to, under warrant, collect evidence from electronic devices.

The role these technological advancements have played in Australian drug markets has not yet been studied in detail. This bulletin explores the nature of smartphone-enabled communications among Australian drug market participants by identifying those who most often use this technology and the reasons they use it. This knowledge is important because evidence suggests app-based drug markets have grown and are associated with various risks and harms (Moyle et al. 2019). Additionally, a better understanding of how apps are used to facilitate drug dealing may assist the development of law enforcement tactics and strategies to disrupt and frustrate these activities.

Method

Using data drawn from the Drug Use Monitoring in Australia (DUMA) program, the study's sample comprised 487 police detainees interviewed at police stations and watch houses in Brisbane (36%, *n*=174), Perth (33%, *n*=162), Adelaide (20%, *n*=96) and Sydney (11%, *n*=55) during July and August 2018. The study used data from an addendum asking respondents about mobile phone ownership, use of messaging apps and how these technologies were used to buy, sell or deliver drugs or communicate with others involved in these activities. The survey asked about social media apps and instant messaging services such as iMessage, Facebook Messenger, WhatsApp, Skype, Wickr and Snapchat.

Most respondents in the sample were male (83%, *n*=404) and non-Indigenous (74%, *n*=358). The median age of the sample was 32 years (interquartile range=25–39), ranging from 18 to 66 years. Almost all detainees had used a mobile phone in their lifetime to call (97%, *n*=472) or text (95%, *n*=461) others. The majority also reported use of a landline phone (72%, *n*=353), payphone (78%, *n*=380), email (72%, *n*=351), social networking website (77%, *n*=374), or messaging app (74%, *n*=358). Eighty-one percent (*n*=386) of detainees currently used a smartphone or other mobile phone. Of these, most used only one phone (86%, *n*=330) and bought their phone from a shop (65%, *n*=250). Detainees who had never used a mobile phone (3%, *n*=12) were excluded from further analysis.

Of those who had used a mobile phone, 59 percent (*n*=278) had used it for drug-related communication, defined as communication about buying, selling or delivering drugs. The sample included a range of drug market participants, from casual drug users to those actively engaged in drug distribution, and it may be that methods of smartphone communication are more sophisticated among those involved in drug distribution.

Results

Among the 278 detainees who had used mobile phones for drug-related communication, 98 percent (*n*=271) had used their phone to buy drugs, almost half (48%, *n*=132) had used it to sell drugs and 41 percent (*n*=114) had used it to deliver drugs (see Table 1). Overall, 43 percent (*n*=120) of those who had used a mobile phone for drug-related communication had used the phone to buy drugs but not sell or deliver them ('buyers'), and 57 percent (*n*=158) had used a mobile to sell or deliver drugs ('suppliers'). Almost all suppliers (*n*=151) had also used a mobile phone to buy drugs, and five percent (*n*=13) had delivered drugs but not sold them.

Additionally, 128 detainees had received information from others about the presence of law enforcement officers or advised people about the presence of law enforcement officers. Almost all of these detainees had also bought, sold or delivered drugs (97%, *n*=124).

Table 1: How drug market participants use mobile phones		
	n	%
Buys drugs only (buyers)	120	43.2
Buys drugs and sells/delivers drugs	151	54.3
Total buying drugs	271	97.5
Sells/delivers drugs only	7	2.5
Total selling drugs	132	47.5
Delivers drugs but does not sell them	13	4.7
Total delivering drugs	114	41.0
Total selling/delivering drugs (suppliers)	158	56.8
Total buying, selling or delivering drugs	278	100

Note: Percentages do not total 100 because participants could provide more than one response

Source: AIC DUMA collection 2018 [computer file]

The most common telecommunication methods detainees had ever used to buy or supply drugs were phone calls (85%, *n*=235), text messages (77%, *n*=215) and messaging apps (53%, *n*=146). Sending photos (16%, *n*=45) and using video calls (12%, *n*=34) were less common.

Who uses messaging apps to buy and supply drugs?

The median age of people who had used apps for drug buying or supplying was 29 (interquartile range=24–35) compared with 35 (interquartile range=28–43) for those using other phone-based services for drug buying or supplying. A Wilcoxon–Mann Whitney test suggested a significant difference between the ages of these two groups (z=4.521, p<0.001). A chi-squared test also suggested detainees who had earned income from crime in the past 30 days were significantly more likely than those who had not to have used apps for drug buying or supplying (65%, *n*=69 vs 46%, *n*=77, χ^2(1)=9.69, p=0.002, φ=0.19). Detainees who had used methamphetamine or ecstasy in the past 12 months were also significantly more likely than those who had not to have used apps for drug buying or supplying (methamphetamine: 55%, *n*=115 vs 34% *n*=11, χ^2(1)=4.86, p=0.03, φ=0.14; ecstasy: 74%, *n*=39 vs 55%, *n*=77, χ^2(1)=5.54, p=0.02, φ=0.17).

A chi-squared test suggested detainees who had used a mobile phone for supplying drugs were significantly more likely than those who used a phone to buy drugs to have used messaging apps for drug-related communication (69%, *n*=109 vs 32%, *n*=37, χ^2(1)=38.49, p<0.001, φ=0.37). Drug suppliers were also significantly more likely than buyers to have used two or more apps for drug-related communication (72%, *n*=78 vs 51%, *n*=19, χ^2(1)=5.06, p=0.024, φ=0.19).

The leading messaging apps for buying or supplying drugs were Facebook Messenger (42%, *n*=115), Wickr (26%, *n*=72), Snapchat (15%, *n*=42), WhatsApp (15%, *n*=41) and Signal (10%, *n*=28) (see Table 2). Some apps were more commonly used by those supplying drugs. All Kik users (100%, *n*=11) had supplied drugs with this app, as had most users of Signal (89%, *n*=25), Snapchat (86%, *n*=36) and Wickr (84%, *n*=59).

| Table 2: Top 10 messaging apps detainees used for buying or supplying drugs			
Messaging app	**Description**	***n***	**%**
1. Facebook Messenger	Connected to a user's Facebook profile. Users can send messages, pictures, audio and video. End-to-end encryption can be manually enabled.	114	41.6
2. Wickr	Enables users to send messages, voice and video chats. End-to-end encryption.	70	25.6
3. Snapchat	Multimedia app. Enables users to share photos and videos ('Snaps') or texts. Messages are deleted by default.	42	15.3
4. WhatsApp	Users can send messages, video, pictures and audio. Automatic end-to-end encryption.	40	14.6
5. iMessage	Available on Apple mobile operating system (iOS) devices. Supports text messages, photos and videos. End-to-end encryption.	35	12.8
6. Signal	Open source project. Enables users to send text, voice and video messages. End-to-end encryption.	28	10.2
7. Skype	Supports audio and video calling, messaging and screen sharing. All voice, video, file transfers and instant messages are encrypted.	18	6.6
8. Kik	Users share messages, photos, videos, and other multimedia content. Built for young people.	11	4.0
9. FaceTime	Available on iOS devices. Supports video and audio calls. End-to-end encryption.	8	2.9
10. Viber	Supports audio and video calls and sending of texts, photos and videos. End-to-end encryption by default.	7	2.6

Note: Percentages do not total 100 because detainees could use more than one app

Source: AIC DUMA collection 2018 [computer file]

Why do drug buyers and suppliers use messaging apps?

The most common reason detainees had used messaging apps to buy or supply drugs was that they were easy or convenient to use (69%, n=101). Detainees who had only bought drugs were significantly more likely than those who had supplied drugs to have used messaging apps for this reason (86%, n=32 vs 63%, n=69, χ^2(1)=6.96, p=0.008, φ=0.22) (see Figure 1).

Figure 1: Drug buyers' and suppliers' reasons for using messaging apps (%)
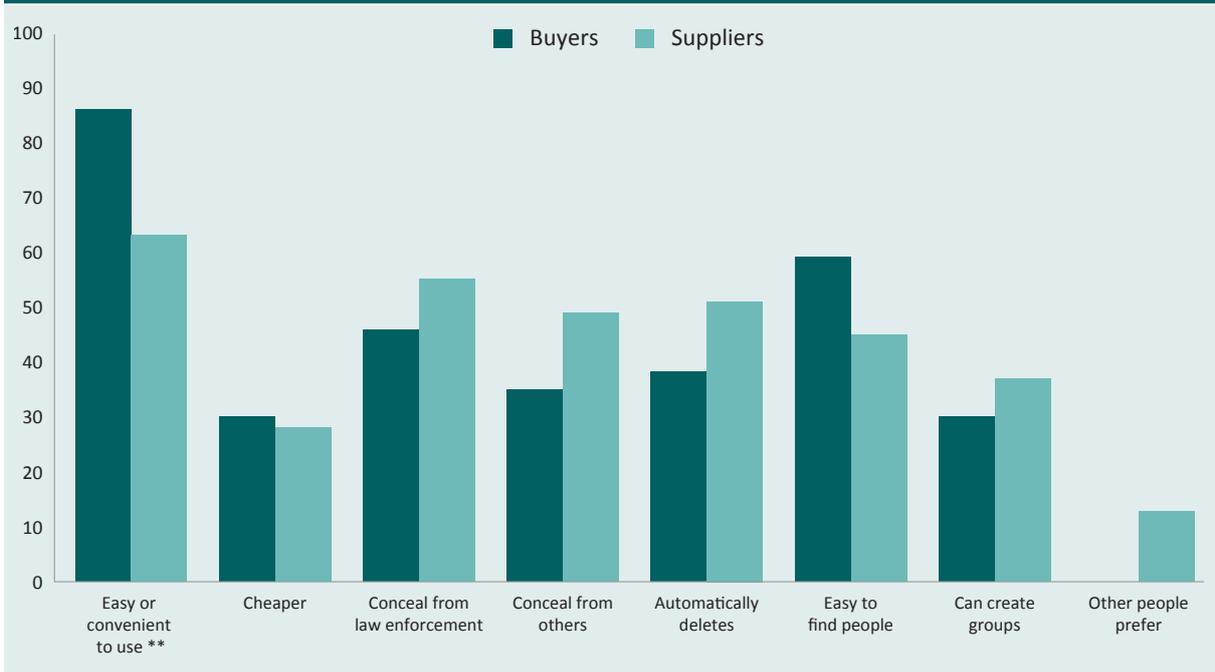
**statistically significant at $p<0.01$
Note: Respondents could select multiple responses
Source: AIC DUMA collection 2018 [computer file]

Drug buyers and suppliers also used messaging apps for reasons related to concealment or security. More than half (55%, $n=60$) of the detainees who had used apps to supply drugs reported using them to conceal their communications from law enforcement, compared with 46 percent ($n=17$) of detainees who had only bought drugs. Additionally, 49 percent ($n=53$) of detainees who had used apps to supply drugs reported using them to conceal communications from other people, compared with 35 percent ($n=13$) of detainees who had only bought drugs. Half (51%, $n=56$) of the detainees who had used mobile phones to supply drugs and 38 percent ($n=14$) of those who had bought drugs had used apps because the messages were automatically deleted. Detainees who had used apps for supplying drugs were generally more likely to use them for these concealment reasons, but none of the differences between drug suppliers and buyers was statistically significant.

The final reason drug buyers and suppliers used apps was to connect with others. Fifty-nine percent ($n=22$) of detainees who had used apps only to buy drugs reported that these apps made it easy to find others, compared with 45 percent ($n=49$) of detainees who had used apps to supply drugs. More than one-third (37%, $n=40$) of detainees who had used apps to supply drugs reported using the apps because they enabled group messages or conversations, similar to the 30 percent ($n=11$) of detainees who had used apps only to buy drugs. The difference between the proportions of drug buyers and suppliers who gave these two reasons for using apps was not statistically significant. Thirteen percent ($n=14$) of suppliers reported that apps were the preferred communication method of their dealer or another person. Only suppliers gave this reason but, as noted earlier, almost all suppliers were also drug buyers.

Concealment from law enforcement

In addition to messaging apps with encryption functions, detainees reported using other ways to conceal their drug-related communication from law enforcement. Among those who had used a mobile phone to buy or supply drugs, 45 percent (n=125) had used code words or codenames and 17 percent (n=47) had used an encrypted device such as a BlackBerry. Detainees who had used a mobile phone to supply drugs were significantly more likely than those who had only bought drugs to have concealed their activities from law enforcement using code words or codenames (56%, n=88 vs 31%, n=37, χ^2(1)=17.02, p<0.001, φ=0.25) or an encrypted device (26%, n=41 vs 5%, n=6, χ^2(1)=21.27, p<0.001, φ=0.28).

Detainees who had used a mobile phone to supply drugs were also significantly more likely than those who had bought drugs to have used covert, non-primary or 'burner' phones to conceal their activities from law enforcement (34%, n=53 vs 6%, n=7, χ^2(1)=30.92, p<0.001, φ=0.33). A burner phone is a no-contract prepaid mobile phone or SIM card typically used for a short period of time and then thrown away. Detainees who used burner phones to conceal their drug supplying or buying most commonly reported discarding their phones or SIM cards every week (29%, n=17).

Almost all detainees asked about call tracing (n=442) believed law enforcement could easily trace the location of mobile phone calls (92%, n=406). Similarly almost everyone asked about interception of mobile phone communications (n=434) believed law enforcement could easily intercept messages, calls, videos or photos (90%, n=392). Of those who had used a mobile phone to supply or buy drugs, 38 percent (n=104) had stopped using their phone because of these law enforcement capabilities. Those who had used a phone to supply drugs were significantly more likely than drug buyers to have stopped using their phone for these reasons (47%, n=73 vs 24%, n=28, χ^2(1)=15.33, p<0.001, φ=0.24). The most common communication method for drug suppliers and buyers who had stopped using their mobile phone was face-to-face (87%, n=86).

Discussion

This study suggests the use of mobile phones to buy, sell and deliver drugs is common among police detainees, even though almost all respondents believed law enforcement could easily trace phone calls and intercept messages. The findings also suggest that detainees who used mobile phones to buy or supply drugs mainly used phone calls and text messages. Phone calls and texts require knowledge of a drug seller's or buyer's phone number and may suggest some level of familiarity between buyer and supplier. This may provide further evidence of social supply in drug markets (Hough et al. 2003; Potter 2009). It may also suggest drug suppliers are distributing their phone number to potential customers in public places (Søgaard et al. 2019), posting their contact information on social media platforms or sending it to potential buyers in private messages (Demant et al. 2019). Communicating with phone calls and texts may also signify the drug buyers and suppliers in this study had difficulty accessing certain technologies due to the digital divide separating those with ready access to information and communication technologies and those without it. Respondents may also have deliberately adopted a more conservative approach to technological developments, choosing other communication methods because they were simple, easily accessible and regarded as safe (Søgaard et al. 2019).

However, the proliferation of messaging apps was evident in the 53 percent of detainees who had used them to buy or supply drugs. Age was a key factor here, with younger detainees more likely to adopt the technology, consistent with international research (Moyle et al. 2019). Facebook Messenger was the leading app for drug-related communication, reflecting its general popularity in Australia and globally (Dunn 2017; Nine News 2018). Wickr was the next most commonly used app, in line with international research suggesting Australian drug users were more likely to use Wickr than those in other countries (Moyle et al. 2019). Detainees who had used a mobile phone to supply drugs were more likely than those who used a mobile phone only to buy drugs to have used messaging apps. This may be explained by perceptions that these apps have security features protecting users from detection by law enforcement and prosecution (Moyle et al. 2019). Almost three-quarters of detainees who had sold or delivered drugs through messaging apps had used two or more apps, suggesting drug dealers may switch between different apps to communicate with a broad customer base. The use of two or more apps may also be evidence of drug suppliers and buyers initially connecting on a social media app such as Facebook before shifting their conversation to a secure messaging service such as Wickr to arrange a face-to-face meeting to exchange the drugs (Moyle et al. 2019).

This study used a cross-sectional survey and thus it cannot make conclusions about causality. It is also limited by the size of its sample and the fact that data was collected from only four urban centres. The sample was not representative of police detainees in Australia, but included a large number of drug market participants from different cities, many of whom had used mobile phones and apps to buy, sell or deliver drugs. The study aggregated drug sellers with those who delivered drugs, but recognises these groups may use communications technology differently (Coomber & Moyle 2017). The study also asked about the behaviours of respondents in their lifetime and thus the results are limited by the respondents' recall. It is also possible the use of long-established telecommunications services such as phone calls would have been different if the reference period had been the last 12 months.

Moyle et al. (2019) suggested 'app-mediated' drug markets were situated somewhere between street-level drug markets and internet-based cryptomarkets, which involve the use of complex technology and can be perceived as excessively complicated (Childs et al. 2019; Demant et al. 2019). This study suggests drug suppliers may have adopted apps for selling and delivering drugs more rapidly than drug buyers and that the security functions of some of these apps are attractive to them. These apps pose challenges to law enforcement efforts to disrupt drug supply by tracing and intercepting telecommunications. The perceived capacity of policing agencies to trace calls and intercept messages appears to be a deterrent for some drug market participants, particularly suppliers. However, drug suppliers also use messaging apps for their convenience and social connectivity functions, consistent with Moyle et al.'s (2019) international research. These features make apps appealing to all users and thus any updates or changes to messaging apps that frustrate drug-related crime must be careful to not also compromise legitimate activities.

Conclusion

In providing a better understanding of the motives and methods of drug buyers and suppliers using mobile phones and messaging apps, this study may assist in the development of countermeasures for drug-related crime enabled by these technologies. The findings indicate that not all drug dealing involves encrypted communications and that crime prevention efforts should continue to target offenders' use of phone calls and text messages. However, the use of apps by drug suppliers indicates these services can facilitate relatively serious offending. Their popularity among young people also suggests drug markets facilitated by messaging apps are likely to continue to grow.

Acknowledgements

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