

An analysis of a bi-directional school nurse-led text-messaging service

Promoting, protecting and educating the health and wellbeing of young people (YP) is essential to public health and it is recognised that school nurses (SNs) can make a positive difference by offering early advice and support (Department of Health [DH], 2012). However, reductions in the United Kingdom (UK) school nursing workforce and financial disinvestment means there are challenges in how to effectively maximise the contribution of the school nursing service (DH, 2014). Additionally, while it is acknowledged that school nurses are a key aspect of universal health services (Prymachuk, 2011), a large proportion of young people (YP) in the UK are uncertain of how to access their school nurse (BYC, 2011), which is a substantial barrier to making a difference to public health issues.

With the intention to improve access, the school nursing service in two large inner London Boroughs implemented ChatHealth, which is a web-based messaging system offering a safe and governed way of texting a school nurse (National Institute for Health and Care Excellence [NICE], 2017). ChatHealth is owned by Leicestershire Partnership NHS Trust and paid for in the London Borough by the local NHS Trust. Its main purpose is to allow YP aged 11–19 to ask a school nurse for advice and support via an anonymous SMS (NICE, 2017). It is a new system and within UK nursing, an unconventional way of communicating with YP. The NICE identifies that, to date, there is a limited evidence base about the impact ChatHealth has had (NICE, 2017).

The UK's Healthy Child Programme (HCP) 5–19 (DH, 2009) provides best evidence to promote and protect the health of children and YP. However, due to the undersized school nursing workforce available, it is recognised that there are challenges facing school nursing teams delivering this programme (DH, 2014). The utilisation of a text-messaging system creates the possibility to be more accessible creating the opportunity to act earlier and become more visible. Arguably, this in turn enhances the capacity of the school nurse to deliver more of the expectations of the HCP.

There were 11.9 million young people aged 10–19 years in the UK in 2016 (Hagell et al, 2017) and 90% of young people 16–24 in the UK owned a smartphone (Ofcom, 2016). Data for younger age groups suggest that mobile phone ownership makes it the single most familiar device,

Abstract

Aim: To analyse a school nurse led bi-directional text messaging service provided to young people aged 11–19 in two inner London boroughs.

Background: School nurses play a key role in providing early advice and support to the school-aged population. The ability to access a school nurse has been recognised by young people as something that needs to improve and suggestions of being able to text a school nurse have been made. ChatHealth is a bi-directional text messaging system that allows young people aged 11–19 to ask a school nurse for advice and support via an anonymous short messaging system (SMS). Arguably, ChatHealth offers more opportunities than traditional access methods to reach more young people. However, due to the relatively new concept, there is a limited evidence base regarding its effectiveness.

Methods: An audit of documentary data was completed to analyse the uptake and outcomes of ChatHealth in the local area. Content analysis was carried out analysing 26 conversation transcripts and a staff questionnaire was distributed to gain a better understanding of the role of the school nurse delivering ChatHealth.

Findings: The ChatHealth service appears to be proactive in offering an efficient response to a variety of physical, emotional, sexual health and appointment queries, additionally, the uptake of the service has supplemented the established face-to-face contacts. In the local area, emotional health is the most common type of query being received from young people and the topic school nurses feel least confident in responding to. School nurses identify the benefits of ChatHealth in improving young people's access and in enhancing the visibility of the school nursing service and did not identify it as an inconvenience to their current workload.

Key words

■ School nursing ■ ChatHealth ■ Young people
■ Bi-directional text messaging service

owned by 90% of children by the age of 14 (Livingstone et al, 2009). To put the size of mobile phone ownership into

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context, the United Nations (UN) estimates that more people have access to a mobile phone than to a toilet (UN News Centre, 2013).

The UK's Department of Health and Social Care recognises that school nurses are key to early identification of health needs and early help is deemed an important part of the school nursing role to prevent problems escalating (DH, 2012). There is pressure for school nursing services to be flexible, to be designed to reach YP wherever they are and to be universal (DH, 2009; DH, 2012). In addition, one aspect of the role of the nurse in the 21st century is to provide accessible ways to help individuals make decisions about their health (NMC, 2018). Making Every Contact Count (MECC) is policy developed by Public Health England (PHE) and its principle is to maximise opportunity through brief discussion during routine health interactions (PHE, 2016). However, it is recognised that consideration needs to be applied to the accessibility of information if MECC is to enhance the health literacy of populations (Varley and Murfin, 2014). While it is recognised that YP are at risk of experiencing a broad range of health and social issues they are less likely to access health services compared to other age groups due to concerns about confidentiality, embarrassment and not knowing where to access support (The Kings Fund, 2018). However, in contrast it is reported that YP draw upon community-based health services more than any other age group (Hagell et al, 2017). 'You're Welcome' standards are a set of quality criteria for YP-friendly services and recommends that services working with YP should be accessible, confidential and allow for service user feedback (DH, 2007). A later published pilot of the 'You're Welcome' standards advocates that services should make YP feel welcome and one option suggested is through a text-messaging service (DH, 2017). Additionally, when utilising the school nurse, young people themselves have stated how important confidentiality and accessibility is to them and texting was recognised as a method to do this (BYC, 2011). The functionalities of the ChatHealth system can practically support these requests from YP and has the potential to enable access by hard-to-reach groups (Endicott and Clarke, 2014). It could be argued that, for a school nursing service working with YP, texting as a form of communication method is a logical step in improving YP's access to health support.

A scoping review of the literature was undertaken to identify the existing literature on bi-directional text messaging services provided to young people. The review followed Arksey and O'Malley's (2005) methodological framework. Nine studies were identified through searching the databases: CINAHL; Medline; Web of Science; Open Grey and from hand searching (Aveyard, 2010). One seminal paper was published in 2004 the other eight were between 2012 and 2018. Two of the studies were published in the United States (US) the rest were from the UK.

Access to the school nursing service was a core theme within the papers. Text messaging was found to improve and expand access options for YP to have

contact with school nurses (Utting, 2004; France, 2014; Bulmer and Webster, 2016; Dodd, 2017). However, the service needs to be promoted effectively to expand access (Leicestershire Partnership NHS Trust, 2012; Willoughby, 2015; Dodd, 2017). Willoughby and L'Engle (2015) concluded in the US study that it is necessary to adequately promote texting services to YP for them to be successful. Studies found that an important issue for YP in accessing a school nurse is confidentiality and anonymity (Utting, 2004; France, 2014; Bulmer and Webster, 2016). Despite this, Endicott and Clarke (2014) who published results of their initial text messaging pilot period for ChatHealth found that texting conversations began anonymously and then names were provided after several exchanges in 55% of text 'conversations'.

Engagement was another theme within the studies, with texting increasing the quantity of engagement between YP and the school nurse service. Endicott and Clarke (2014) found in the pilot of Leicestershire's ChatHealth an 18% increase in contacts over one term compared to the previous year, when only traditional access methods to the school nursing service were available. Over a period of 7 months France (2014) received 202 text messages from YP, while Utting (2004) over a period of 6 months had 147 YP utilise the messaging service. Although a range of factors, such as the number of school nurses, number of schools, auditing processes, marketing strategies, in-house support, commissioning arrangements, the technology available and staff engagement varied across these small-scale studies, they found a universal increase in engagement between YP and the school nursing service through text messaging.

Text messaging did not replace face-to-face opportunities but was found to support them (Endicott and Clarke, 2014; France, 2014). France found that 22% of the texting contacts resulted in face-to-face contacts. Griffiths and Sturt (2018) further reported that the option of texting helps to trigger the initial engagement with the school nursing service and provides a safe virtual distance for harder to reach users. However, Willoughby and L'Engle (2015) found a barrier to engagement highlighted by students who had not used the service despite hearing about it. It was due to YP struggling to know how to formulate questions. This too was recognised by Leicestershire Partnership NHS Trust (2012) were YP wished to see examples on promotional materials of the types of queries the texting service can be used for. The development of a video by France (2014) helped to paint a visual picture to YP of how and why a young person might message a school nurse to overcome this barrier.

The most popular topic which YP sought advice for was sexual health, which included puberty and relationships. The studies by France (2014), Utting (2004) and Endicott and Clarke (2014) reported this topic accounted for 56%, 42% and 34% of texts respectively. The second most popular topic was emotional wellbeing. France (2014) found 25% and Endicott and Clarke (2014) found 18% of messages were regarding emotional health. Some of

the studies explored the school nurses' experiences of messaging YP about challenging topics such as emotional issues and self-harm (Endicott and Clarke, 2014; Griffiths and Sturt, 2018). These studies highlighted the advantages for school nurses of a text service as they were able to draw upon support services such as mental health and on each other when responding to such queries giving them the time and space to respond with up-to-date evidence.

Methodology

This study aimed to analyse a school nurse-led bi-directional text messaging service provided to young people aged 11–19 in two inner London boroughs.

Objectives

The objectives of the study are to explore:

- The uptake of the ChatHealth service
- The outcomes of the ChatHealth service
- The quality of the ChatHealth service young people are receiving
- The interactions between service users and school nurses through a content analysis of transcripts
- The school nurse's perceptions of delivering the service.

Prior to commencing the study, ethical permission was gained. As this study aimed to assess existing practice (Mateo and Foreman, 2014) a mixed methods approach was taken gaining quantitative and qualitative data. An audit of documentary data was used to explore the existing data captured in relation to uptake and outcomes of ChatHealth, content analysis of transcripts was undertaken to analyse interactions and quality and a staff questionnaire was used to gain an understanding of the role of the school nurse using ChatHealth.

The owners of ChatHealth send monthly data reports to the London NHS trust regarding the uptake of the service and this provides numeric information of how many conversations (a text dialogue) have occurred and how many text messages were received and sent to the service. Additionally, service user feedback ratings, whether a face-to-face appointment was arranged and the health reason/s the young person contacted the service about are also reported. The audit period was over 19 months from when the service launched in the local area in 2016 until the spring of 2018.

Transcripts detailing the entire conversation between school nurses and young people, including the times messages were sent and received are generated once a ChatHealth conversation has been closed. Over a 3-month period in the spring of 2018, 49 transcripts were created, just over half were included in the content analysis ($n=26$). A content analysis tool was developed and piloted using the local ChatHealth Standard Operating Procedure (SOP), which stipulates expected benchmarks in relation to communicating with YP using a text-messaging service. The tool also included aspects considered best practice by the service provider, for example, sending client feedback requests. It is reported that content analysis can support gaps between qualitative and quantitative evaluation

1) Do you think ChatHealth has improved young people's accessibility to the school nursing service?

- Yes
 No

2) How confident do you feel in communicating with young people using ChatHealth? (Please rate from 1–5, where 1 means not confident at all and 5 means very confident.)

1 2 3 4 5

If you scored less than 3 what do you think could improve your confidence?

3) How confident do you feel responding to messages indicating risk of significant harm? (Please rate from 1–5, where 1 means not confident at all and 5 means very confident.)

1 2 3 4 5

If you scored less than 3 what do you think could improve your confidence?

4) In the last 12 months how many group health promotion sessions have you delivered promoting ChatHealth?

0–4 5–9 10–15 16 and above

5) Do you promote ChatHealth during face-to-face contacts with young people?

- Always
 Most of the time
 Sometimes
 Rarely
 Never

6) Are there any topics you find challenging to support young people with using ChatHealth? Please select all that are applicable.

- Sexual health
 Self-harm
 Health conditions
 Healthy lifestyles
 Emotional wellbeing
 Other (please state)
 None

7) What do you think are the benefits of using ChatHealth for staff? Please select all that are applicable.

- Increase in contacts with young people
 Time to consider responses
 Reaching those who may not otherwise access the school nursing service
 Gaining new skills
 Improving school nursing visibility
 Other (please state)
 I do not see any benefits

8) Do you have any suggestions about how the ChatHealth service could be improved?

Figure 1. Survey questions

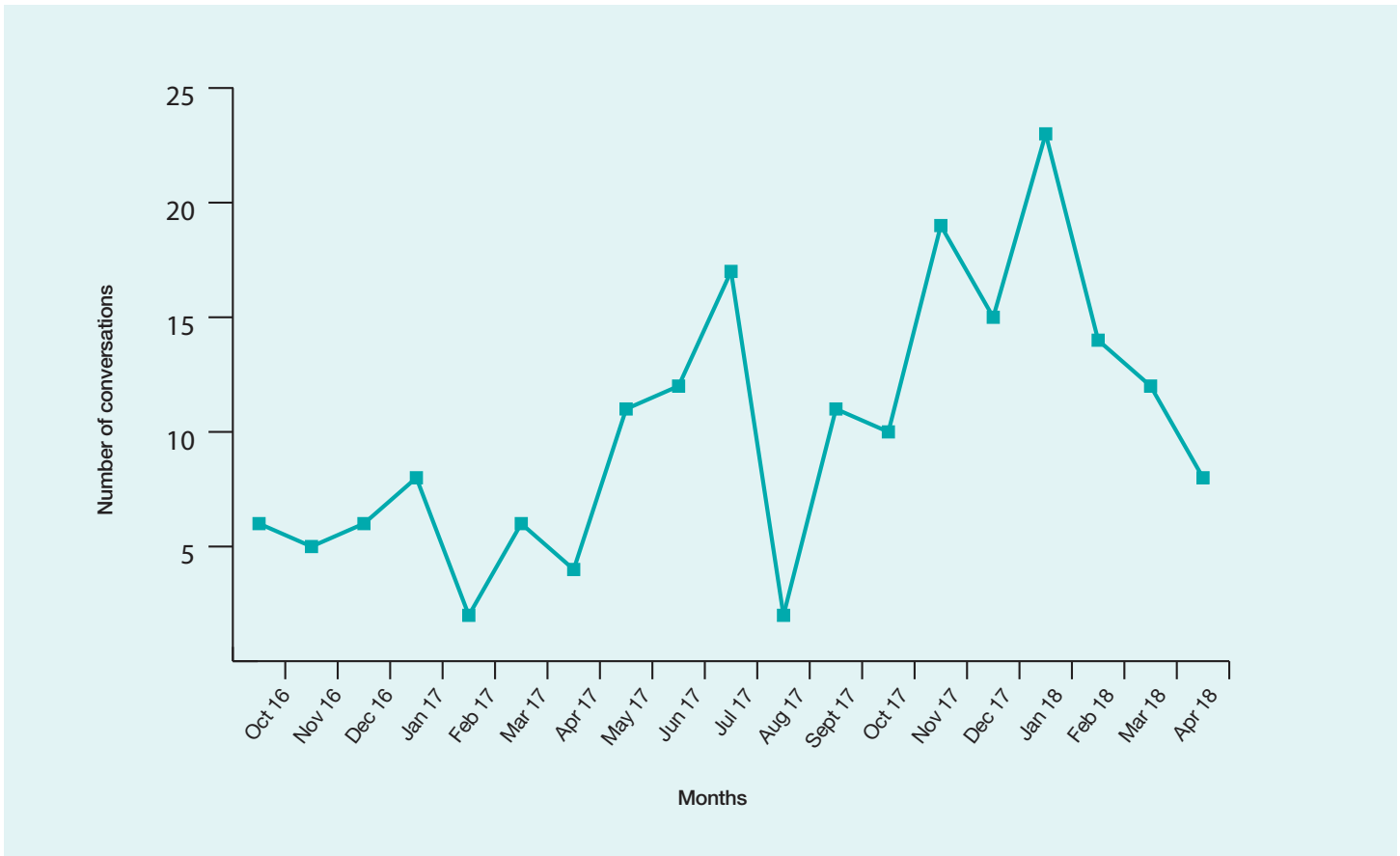


Figure 2. Number of ChatHealth conversations per month

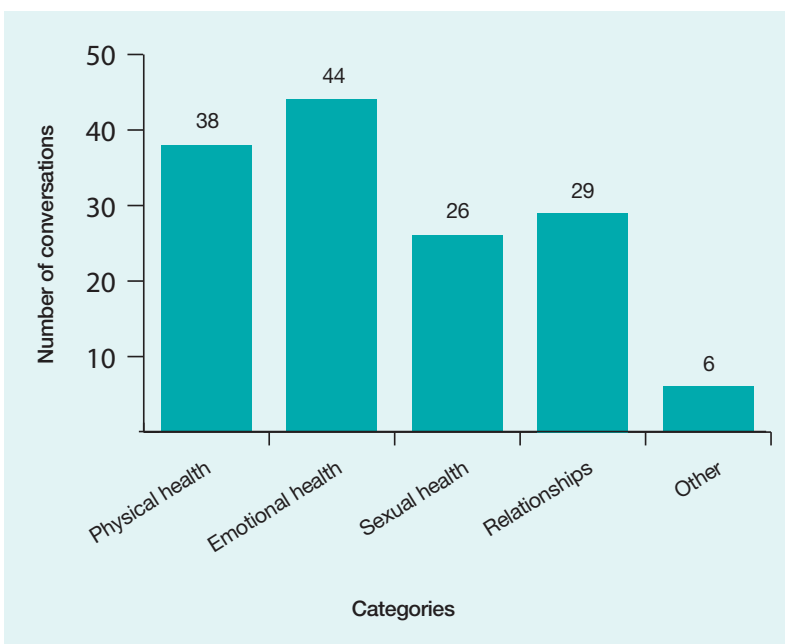


Figure 3. Nature of topic

and offer a link between information and means of communication within health education and promotion research (Moule and Hek, 2011).

An anonymous self-complete online questionnaire sent via a Survey Monkey (SurveyMonkey Inc. 2017)

web link was used to explore the views of school nurses using ChatHealth (Figure 1). The link was sent to all 19 school nurses who respond to ChatHealth text messages, 15 completed the questionnaire providing a 79% response rate.

Data were predominantly quantitative and analysed using descriptive statistics and qualitative methods. This included the audit data, the content analysis of transcripts and the closed and multiple-choice questions on the survey. The open-ended survey questions produced a limited amount of qualitative data, which both researchers analysed by reading several times to identify participants' experience of delivering the ChatHealth service. This data added depth to the quantitative data provided by the small sample of survey participants (Holloway and Wheeler, 2010).

Findings

Audit of documentary data

Over the 19 months analysed there were a total of 1541 messages received from YP and 2053 messages sent to YP from school nurses, all of which occurred within a total of 191 conversations. The peak time for conversations to be opened between YP and school nurses was during January 2018, perhaps coinciding with the return after the Christmas holiday. Another peak period was leading up to the summer holiday in

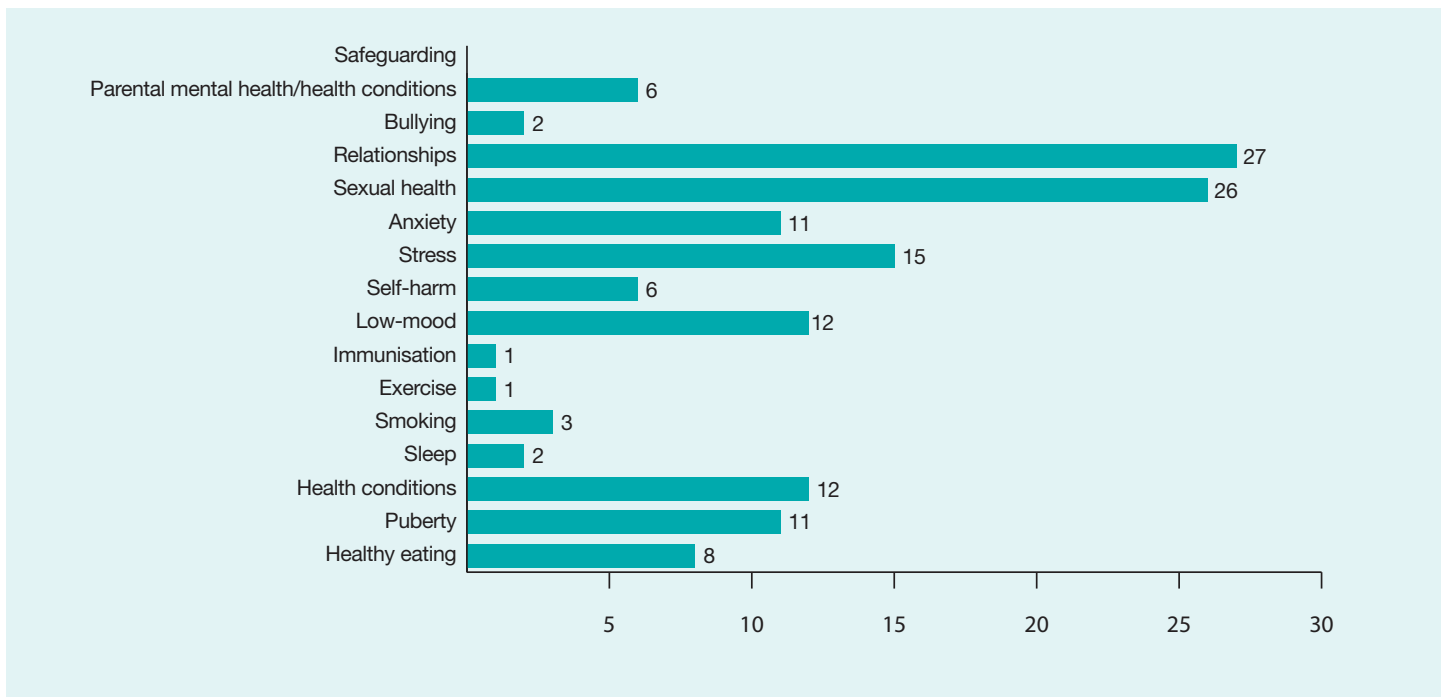


Figure 4. Subtopics of conversations

July 2017 and subsequently the biggest dip followed in August 2017, which would be the summer holiday period (Figure 2).

School nurses sent 14.2% (n=512) more messages to YP than they received. This equates to approximately eight text messages received from young people and 11 messages sent by school nurses per conversation. There could be several explanatory factors for this imbalance.

The nature of the topics covered in conversations was grouped into five categories:

- Sexual health
- Physical health
- Emotional health
- Relationships
- Other.

The largest query identified was emotional health (n=44, 30%), (Figure 3).

The sub-topics which make up the larger categories in Figure 3 are presented in Figure 4. The largest sub-topic was relationships (n=27) followed by sexual health (n=26). The third largest sub-topic fell within the emotional health category and was for stress (n=15). There were no safeguarding queries recorded.

The number of face-to-face appointments arranged through ChatHealth was analysed (Figure 5). These appointments may have been the result of YP messaging directly for an appointment or the school nurses clinical judgement identifying that an appointment is recommended. The data revealed that 28% (n=31) of text messaging contacts resulted in a face-to-face appointment being provisionally arranged.

YP are asked to rate their ChatHealth service user experience on a scale of 1–5 where 1 is considered a poor experience and 5 an excellent experience. However, out

of 191 conversations only 59 provided data of service user satisfaction (30.9%). There could be several reasons for this low response including; the young person not being sent the service user satisfaction request from the school nurse, the young person not responding to the service user satisfaction score request or the school nurse not recording the score. Reassuringly, out of the 59 that did respond, 64.4%, (n=38) gave a satisfaction score of 5 and 20.3% (n=12) a satisfaction score of 4, however, 5.1% (n=3) were very dissatisfied with their experience (Figure 6).

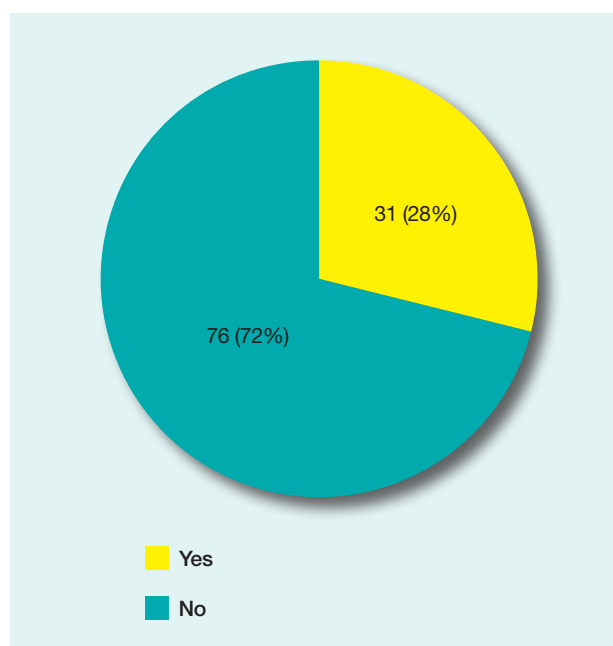


Figure 5. Number of face-to-face appointments arranged via ChatHealth

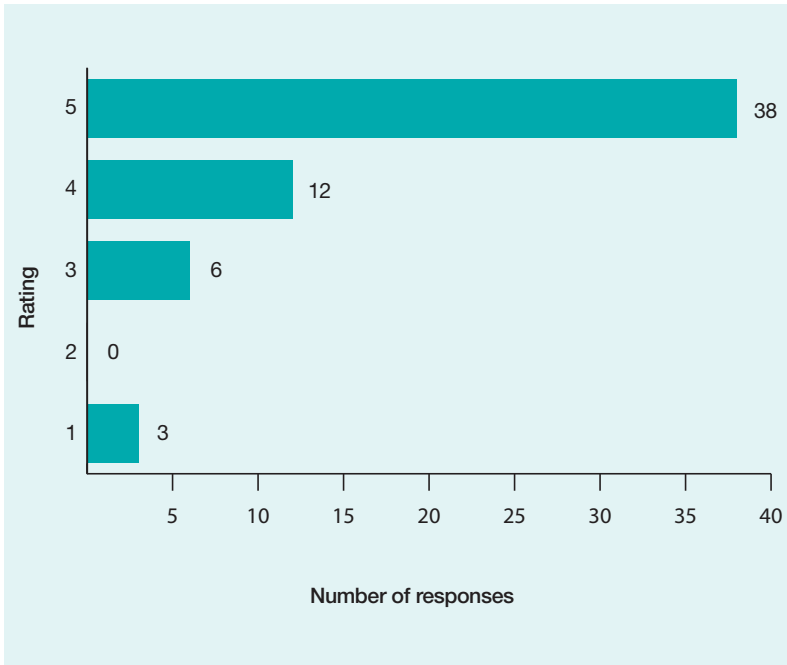


Figure 6. Service user satisfaction score

Content analysis of transcripts

The findings demonstrated that YP sent 28.1% more messages regarding their physical health than they received, while school nurses sent 20.4% more messages to YP regarding emotional health than they received. School nurses also sent more messages about arranging appointments than they received (Figure 7).

Most messages from YP were received between 3pm and 5pm, which coincides with the end of the school day. Other peaks occurred at 8am, 1pm, 7pm and 9pm (Figure 8). These are predominantly times outside of the school day, although some messages are received between 9am and 3pm indicating that consideration may need to be made regarding school mobile phone policies.

The mid-week period, Tuesday ($n=6$, 23.1%), Wednesday ($n=9$, 34.6%) and Thursday ($n=4$, 15.4%) was most popular for receiving initial messages. The findings also demonstrate that some initial messages were received over the weekend (Figure 9).

Service user satisfaction findings outlined earlier regarding the audit of documentary data could be explored in more detail using the 26 transcripts analysed. In the audit 30.9% ($n=59$) had a recorded satisfaction score. Of the 26 transcripts, the response rate was 34.6% ($n=9$). Twelve service users did not respond to a message request ($n=12$, 46.2%) and five were not asked by the school nurses to provide a score (19.2%). The findings therefore suggest that most service users are not responding to service user feedback requests. Of the nine who did respond, two service users added an additional comment:

‘it was good to have someone listen to me for once’

and

‘because it was really helpful.’

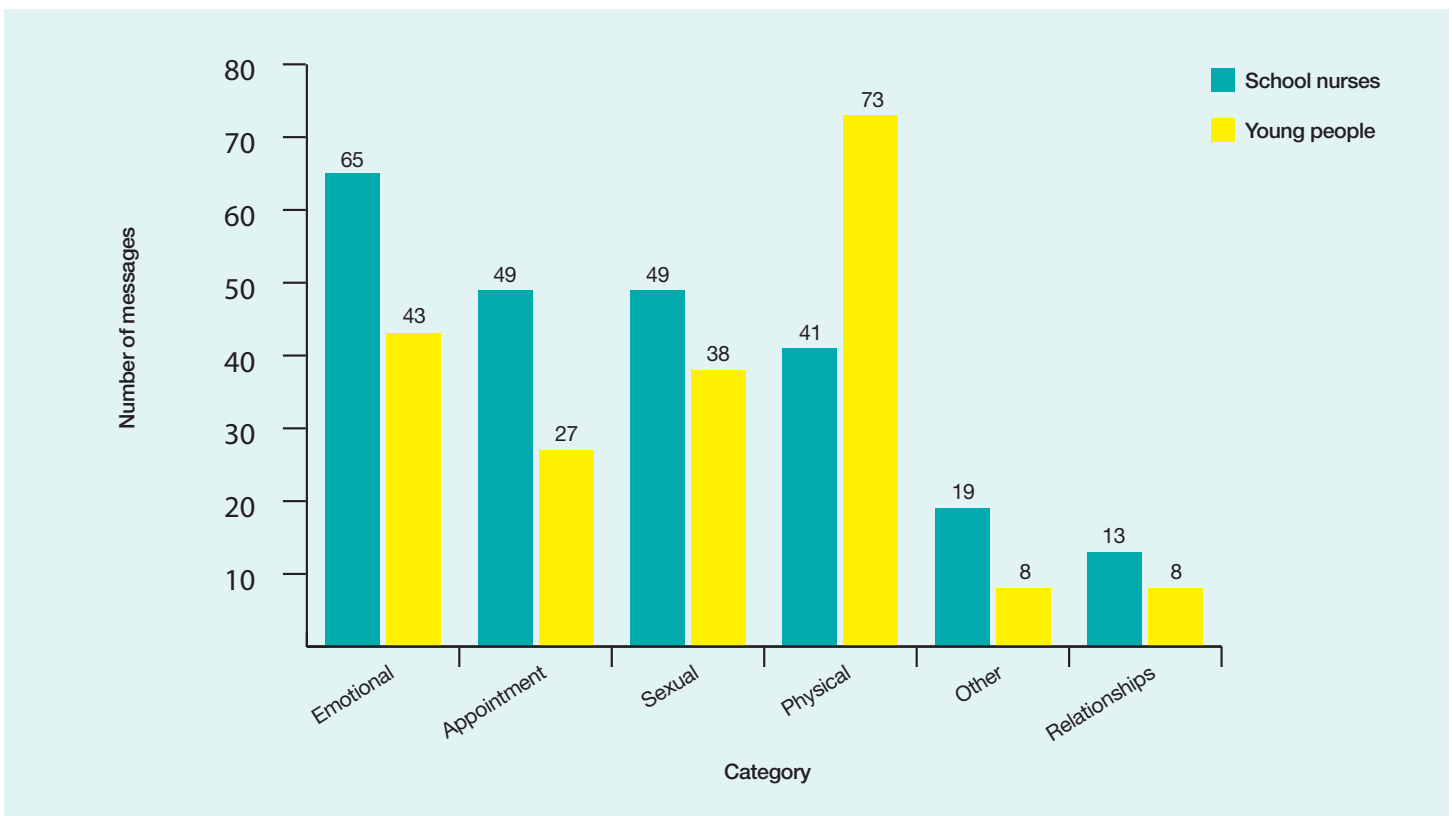


Figure 7. Nature of conversation versus number of messages sent and received

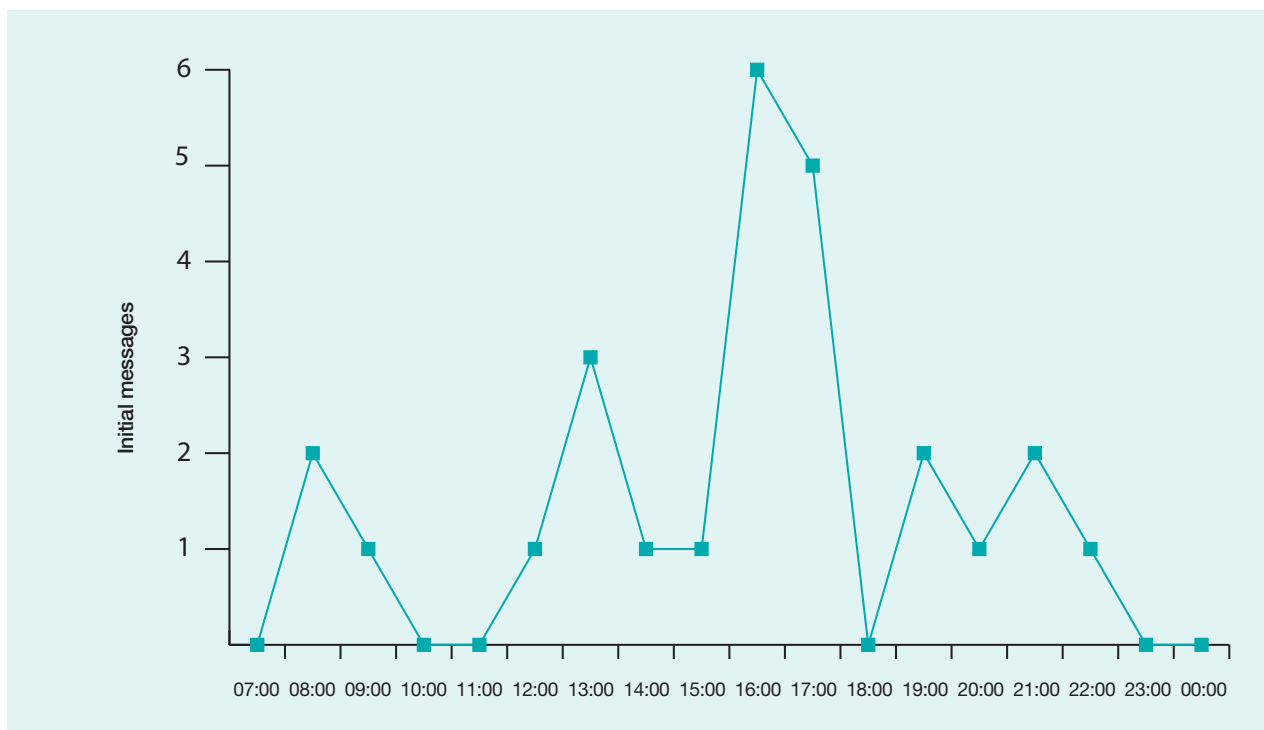


Figure 8. Time of the day in which young people are sending an initial message to the service

As with the audit findings, the majority of those who did respond reported to be very satisfied with the service they received. However, too few are responding to indicate the overall level of satisfaction with the service.

Questionnaire survey for school nurses

The survey consisted of eight questions to explore the views of school nurses using ChatHealth and the barriers and challenges they perceive. Participants unanimously thought ChatHealth is a communication method which has improved YPs ability to access the school nurse in the local area. This finding could suggest that the expectations of the DH (2012) and the BYC (2011) in the quest for school nurses to be more visible and accessible has been recognised by school nurses through the utilisation of the text-messaging service.

School nurses were asked to identify the benefits of using ChatHealth, all identified reaching those who may not otherwise access the school nursing service as the most beneficial aspect of ChatHealth (Figure 10).

The number of school nurses who felt that the visibility of the school nursing service benefited through having ChatHealth was 86.67% (n=13). In addition, a large proportion of respondents (80%, n=12) felt that ChatHealth had increased the contacts school nurses had with YP. One respondent commented:

‘ChatHealth can reduce DNA [did not attend] rates by enabling a nurse to send a text reminder for a face-to-face appointment’

A further respondent stated:

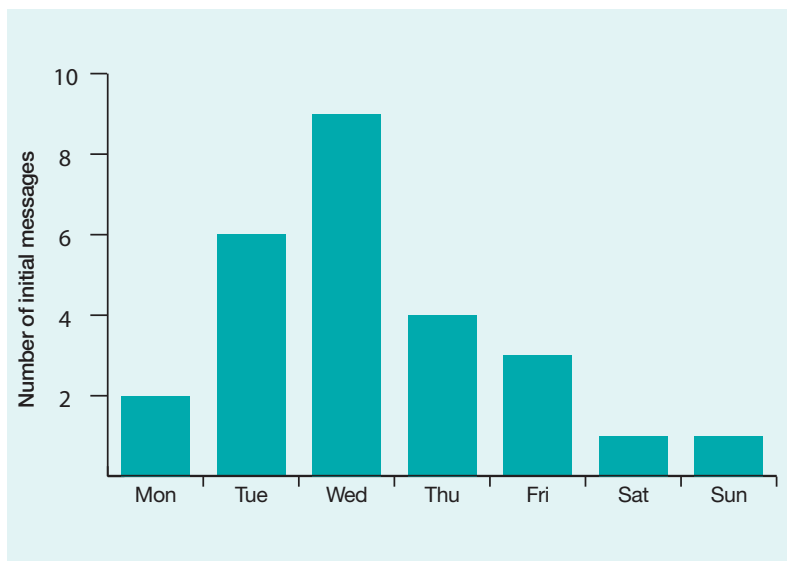


Figure 9. Day of the week in which initial messages were received

‘Speed of response, txt mean forced to be concise.’

This comment is interesting in the context of the findings for gaining new skills. Approximately half of respondents (53.33%, n=8) felt they had gained new skills using ChatHealth. A significant finding was that all school nurses felt that ChatHealth was of benefit to the school nursing service.

The survey asked school nurses for topics they found challenging to support YP with using ChatHealth (Figure 11).

The largest outcome for this question was for self-harm

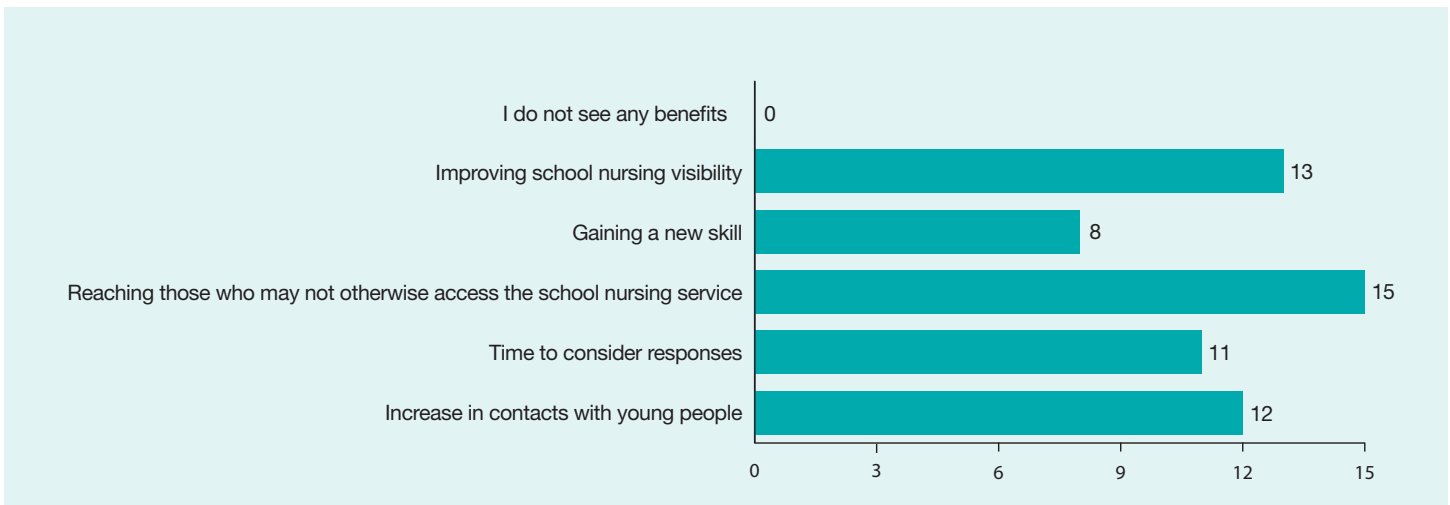


Figure 10. Staff perceptions of the benefits of using ChatHealth

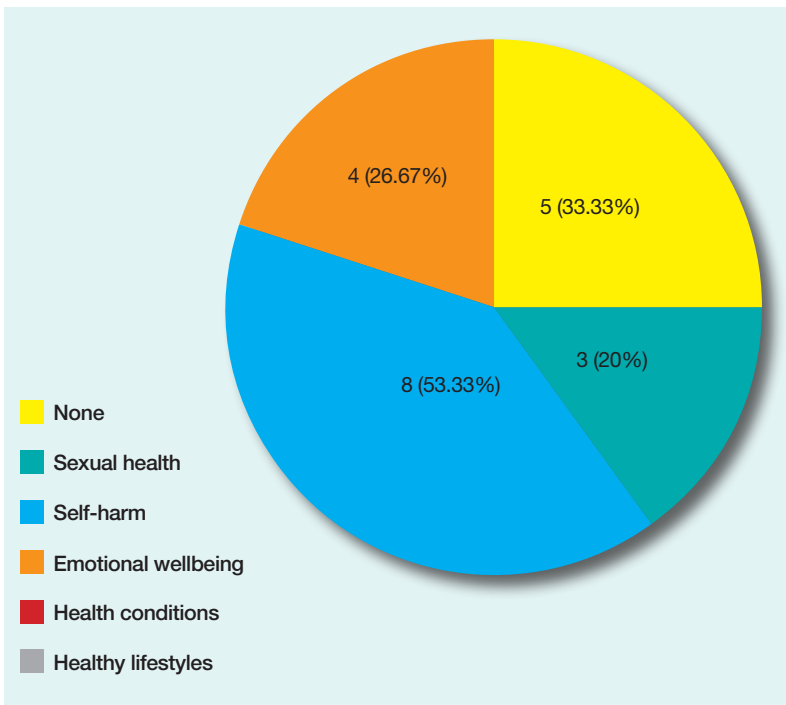


Figure 11. Topics school nurses perceived as challenging to support young people with using ChatHealth

($n=8$, 53.33%), followed by emotional wellbeing ($n=4$, 26.67%) and sexual health ($n=3$, 20%). Interestingly, no staff members found a barrier to communicating via text about physical health conditions or healthy lifestyles, suggesting these are topics school nurses feel most comfortable with. Five school nurses (33.33%) did not find any topics challenging. These findings regarding challenge paralleled the school nurses' perceptions regarding their confidence. With a rating from 1 to 5, where 1 was not confident at all and 5 was very confident, 33.33% ($n=5$) scored a 3 for self-harm.

One respondent stated:

'understanding our role is limited and would/should seek support from managers, safeguarding

leads or duty CAMHS has increased my confidence. The prompt sheet from ChatHealth is very valuable'

This statement perhaps indicates the value school nurses place upon having clear protocols and procedures to follow in such scenarios.

Finally, when asked how the service could be improved most school nurses' responses related to promotion of the service:

'I think just constant promotion of ChatHealth service anywhere appropriate if possible.'

This may mean that school nurses equated better uptake with service improvement or it could reflect that school nurses do not consider the ChatHealth service needs improving.

Discussion

Young people in the local area are accessing ChatHealth as the service received 191 conversations during the audit of the documentary data period, which on average equates to approximately 10 conversations per month. However, in comparison to the estimated number of YP aged 11–19 attending local authority-maintained schools and academies in the two London boroughs (25 000) (ChatHealth, 2018), it is 0.8% of the local target population. This low figure indicates that there are not enough YP accessing the service. However, Willoughby and L'Engle (2015) report in the US that there is no established benchmark for an opt-in bi-directional text messaging service, aimed at YP for the purposes of health, and this is true for the UK. There is no national benchmark for the number of expected initial conversations received to a ChatHealth service per month and per population and therefore no expectation for comparison. However, the questionnaire survey completed by school nurses categorically agreed that ChatHealth improved YP's accessibility to the school nursing service, suggesting that school nurses recognise the opportunity ChatHealth

creates in bridging the gaps between their school visits. The findings revealed messages outside of school hours were received, when young people would not have face-to-face access to a school nurse, including over the weekend. Therefore, it appears the use of text messaging has improved and expanded access options for YP seeking support from school nurses.

The interactivity or engagement of a text-messaging service is associated with increased satisfaction of the service (Willoughby and L'Engle, 2015). The findings from this study would concur with Willoughby and L'Engle as interactivity was evident from the number of text messages received and sent between YP and school nurses, and most YP who had accessed ChatHealth were very satisfied with the care they had received. Additionally, the study discovered that over a quarter of the ChatHealth conversations that were received potentially resulted in a face-to-face appointments. This suggests that having the opportunity for face-to-face interaction with a school nurse is valuable to YP and school nurses. Layard and Hagell (2015) reported that mobile phone health apps are more effective when there is additional face-to-face contact, the findings from this study suggest that a school nursing service benefits its YP by providing a combination of text messaging and face-to-face opportunities. Furthermore, a combination is advantageous in meeting the needs of those who prefer virtual distance and those who wish to request or who agree to a face-to-face appointment if offered.

NICE (2009) recognises school nurses as professionals working with schools to enhance the social and emotional wellbeing of YP, which is important considering mental health problems affect 1 in 10 children and YP and 70% are reported not to have received the support they require (Mental Health Foundation, 2018). The finding that at 30% emotional health was the most common type of query received in the local area indicates YP are demanding this service and recognise their school nurse as being able to support them with such issues. Additionally, relationships are considered a factor that can have an impact on emotional wellbeing (NICE, 2009) and was also a popular nature of messages received in the local area. Interestingly, the percentage of contacts for emotional health is higher to that reported in other studies. France (2014) found 25% were emotional health queries while Endicott and Clarke (2014) found 18%. Data in these studies were collected prior to 2014 and it is possible that mental health issues have increased or are at least more recognised which could account for the higher number locally. However, from a local perspective, both London boroughs are in the top 20% most deprived districts in England (PHE, 2018a and 2008b). It is important to acknowledge this factor due to poor mental health contributing to and being a consequence of wider health inequalities (PHE, 2014). Consequently, it is important for school nurses to feel confident in supporting YP with emotional health concerns while using ChatHealth. Griffiths and Sturt (2018) reported that school nurses

Table 1. Recommendations for future practice

Strengthen local working between health and education in promoting the use of ChatHealth.
Increase staff confidence by delivering training to school nurses in responding to emotional health queries.
Consider the development of standard protocols with the purpose of providing consistency in advice being offered and to encourage evidenced-based practice.
Consider a benchmark for a feasible and acceptable number of conversations to be received each month to ChatHealth based upon local population and needs.

Table 2. Future research

Examination of the demographic characteristics of users of ChatHealth to provide more understanding of whether ChatHealth is reaching those who are considered hard-to-reach groups or communities.
Wider research to establish ChatHealth's impact upon early intervention and potential health behaviour change through exploring where young people are signposted or referred on to because of a ChatHealth conversation.

found ChatHealth useful in providing space to draw upon wider support services during challenging texting conversations and time to ponder a response was also a useful factor identified by staff members (Endicott and Clarke, 2014). These statements were supported within the school nurse survey, where 73% of respondents reported benefitting from time to consider responses an advantage of ChatHealth. However, the most common ChatHealth queries received are also the topics school nurses perceived as most challenging, such as self-harm and emotional health, suggesting there may be some training support required in these areas.

Text messaging within health is described as another form of communication which nurses should respond to in the same way as they would face-to-face (RCN, 2006). However, there are obvious differences which would not support this statement, such as for YP to be receptive of the health messages being sent to them the language used is crucial and should be informative, simple and social (Raymond et al, 2012). Additionally, for positive engagement, YP need to believe the sender is a trustworthy source of information (Gold et al, 2010). The content analysis of transcripts, however, indicated that 23% of queries from YP were not answered, indicating this is an area to improve. It was identified in these instances that signposting too soon without answering the initial question was the cause. Signposting too soon could confuse YP when they accessed the school nurse specifically for advice. Additionally, a further area to improve is the number of YP responding to the feedback service user satisfaction message. The findings revealed that nearly half of

YP who were asked did not respond to this request. Therefore, how the request is worded may need to be revised and simplified to improve response rates.

Limitations and recommendations

A limitation of the study was that there were no baseline measurements in the local area before implementation of ChatHealth for how YP accessed the traditional service or how many accessed a school nurse, therefore, limiting clinical effectiveness outcomes. Additionally, the study did not identify the number of anonymous contacts and the number of YP who shared their identity. This could be interesting in exploring how important anonymity and confidentiality is to YP. Even though it was recorded that 28% of YP potentially attended a face-to-face appointment, the study could not follow up to confirm whether these were attended. The audit of documentary data information was reliant upon school nurses being precise and fully completing outcomes of conversations, which may mean the findings do not accurately reveal the true content of conversations received.

A strength was identified in that the AHCP discovered the views of school nurses, which is an area with limited information within wider research. Positively, all school nurses found ChatHealth to be a benefit to YP's ability to access a school nurse or to the service they provide. Furthermore, very little is known about bi-directional text messaging services within health, specifically involving school nurses and YP. Therefore, a substantial strength of this study is that it has added to the body of evidence currently available and highlighted a plethora of further research possibilities.

Conclusions

Bi-directional text messaging services within school nursing are gradually becoming a popular way to improve YP's access to school nursing services and early support opportunities. However, to get the most out of the potential benefit of ChatHealth more needs to be understood regarding attitudes that influence initial and repeated use. Boosting the visibility of the school nursing service is likely to improve uptake, though perceived levels of interactivity is also influential in developing engagement with service users and subsequently the possibility of recommendations being made to friends. Interactivity also suggests that users are receiving information which they consider important for their health. Additionally, robust and creative promotional campaigns involving YP in the design and implementation is likely to assist in the uptake of the service. As it was identified that over a quarter of text messages to the service potentially resulted in face-to-face appointment opportunities between school nurses and YP, it is considered valuable that as a service both options should be available. This study has demonstrated that text messaging systems of this nature offer a timely opportunity for early advice and support, and have the potential to improve clinical efficiency. Therefore, they are advantageous to wider preventative public health. **BJSN**

Conflict of interest: None declared

Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*. 2005;8(1):19–32. DOI: 10.1080/1364557032000119616

Aveyard H. *Doing a Literature Review in Health and Social Care: A Practical Guide*. 2nd ed. 2010. Oxford University Press, Berkshire

Bulmer J, Webster E. Young people's views about how they would like to access their school nurse. *British Journal of School Nursing*. 2016;11(6):294–298

British Youth Council. *Our school nurse: young people's views on the role of the school nurse*. 2011. Online. Available at: <https://www.oxfordhealth.nhs.uk/children-and-young-people/wp-content/uploads/sites/4/2014/04/140801-Our-School-Nurse-British-Youth-Council.pdf> (Accessed 28 April 2018)

British Youth Council. *British Youth Council Annual Review*. 2012. Online. Available at: <https://www.byc.org.uk/wp-content/uploads/2016/07/British-Youth-Council-Annual-Review-2011-2012.pdf> (Accessed 19 November 2018)

ChatHealth. *Monthly data report: April 2018*. 2018. Leicestershire Partnership NHS Trust

Dodd CA. Are text messaging services the new platform for communication with children and young people? *British Journal of School Nursing*. 2017;12(1):24–29. Online. Available at: <https://www.magonlinelibrary.com/doi/pdf/10.12968/bjsn.2017.12.1.24> (Accessed 1 July 2018)

Department of Health. *You're Welcome Quality Criteria: Making health services young people friendly*. 2017. Online. Available at: <https://www.ouh.nhs.uk/paediatricorthopaedics/information/documents/youre-welcome.pdf> (Accessed 3 June 2018)

Department of Health. *The Healthy Child Programme: From 5–19 years old*. 2009. Online. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492086/HCP_5_to_19.pdf (Accessed 2 June 2018)

Department of Health. *Getting it right for Children and Young People and families: maximising the contribution of the school nursing team: vision and call to action*. 2012. Online. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216464/dh_133352.pdf (Accessed 2 June 2018)

Department of Health. *Maximising the school nursing team contribution to the public health of school-aged children: Guidance to support the commissioning of public health provision for school aged children 5–19*. 2014. Online. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/303769/Service_specifications.pdf (Accessed 2 June 2018)

Department of Health. *You're Welcome Pilot 2017 refreshed standards for piloting: Quality criteria for making health services young people friendly*. 2017. Online. Available at: http://www.youngpeopleshealth.org.uk/yourewelcome/wp-content/uploads/2017/02/YoureWelcome_RefreshedStandards.pdf (Accessed 27 August 2018)

Endicott J, Clarke M. Nurses in Step with the Smartphone Generation. *Primary Health Care*. 2014;24(8):20–24. DOI:10.7748/phc.24.8.20.e849.

France J. Using texts to increase access to school nurses. *Nursing Times*. 2014;110(13):18–19

Gold J, Lim M, Hellard M, Hocking J, Keogh L. What's in a message? Delivering sexual health promotion to young people in Australia via text messaging. *BMC Public Health*. 2010;10:792. Online. Available at: <http://www.biomedcentral.com/1471-2393/10/10> (Accessed 8 January 2018)

Griffiths F, Sturt J. *LYNC Feedback Brief*. 2018. [Retrieved from 'personal communication with the authors'.]

Hagell A, Shah R, Coleman J. *Key Data on Young People 2017*. Association for Young People's Health. 2017. Online. Available at: <http://www.ayph.org.uk/keydata2017/FullVersion2017.pdf>

- (Accessed 3 June 2018)
- Holloway I, Wheeler S. *Qualitative research in Nursing and Healthcare*. 3rd Edition. 2010. Wiley Blackwell, Chichester
- Layard R, Hagell A. *Healthy Young Minds Transforming the Mental Health of Children: Report of the WISH Mental Health and Wellbeing in Children Forum 2015*. 2015. Online. Available at: http://www.mhinnovation.net/sites/default/files/downloads/resource/WISH_Wellbeing_Forum_08.01.15_WEB.pdf on 12 March 2018)
- Leicestershire Partnership NHS Trust. *Messaging Young People in School Nursing: focus groups summer 2012*. 2012. Online. Available at: <http://www.leicspart.nhs.uk/Library/MessagingyoungpeopleinschoolnursingfocusgroupsSummer2012.pdf> (Accessed 1 July 2018)
- Livingstone S, Haddon L, Tsatsou P. *National Report for UK*. 2009. Online. Available at: [http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20I%20\(2006-9\)/EU%20Kids%20Online%20I%20Reports/WP3NationalReportUK.pdf](http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20I%20(2006-9)/EU%20Kids%20Online%20I%20Reports/WP3NationalReportUK.pdf) (Accessed 3 June 2018)
- Mateo MA, Foreman MD. *Research for Advanced Practice Nurses: From Evidence to Practice*. 2nd Edition. 2014. Springer, New York
- Mental Health Foundation. *Mental health statistics: children and young people*. 2018. Online. Available at: <https://www.mental-health.org.uk/statistics/mental-health-statistics-children-and-young-people> (Accessed 3 December 2018)
- Moule P, Hek G. *Making Sense of Research: An Introduction for Health and Social Care Practitioners*. 4th edn. 2011. SAGE publications, London.
- National Institute for Health and Care Excellence. *Social and emotional wellbeing in secondary education*. 2009. Online. Available at: <https://www.nice.org.uk/guidance/ph20/chapter/1-Recommendations> (Accessed 24 November 2018)
- National Institute for Health and Care Excellence. *Health app: ChatHealth communication platform in school nursing services*. 2017. Online. Available at: <https://www.nice.org.uk/guidance/mib130/resources/health-app-chathealth-communication-platform-in-school-nursing-services-pdf-2285963388979909> (Accessed 14 December 2017)
- Nursing and Midwifery Council. *The Future Nurse: Standards of proficiency for registered nurses*. 2018. Online. Available at: <https://www.nmc.org.uk/globalassets/sitedocuments/na-consultation/the-future-nurse-standards-of-proficiency-for-registered-nurses.pdf> (Accessed 21st October 2018)
- Ofcom. *The Communications Market Report 2016*. 2016. Online. Available at: <https://www.ofcom.org.uk/aboutofcom/latest/media/media-releases/2015/cmr-uk-2015> (Accessed 12 March 2018)
- Public Health England. *Health Visiting and School Nurse Programme: Supporting implementation of the new service offer: Promoting emotional wellbeing and positive mental health of children and young people*. 2014. Online. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/299268/Emotional_Health_and_Wellbeing_pathway_Interactive_FINAL.pdf (Accessed 24 November 2018)
- Public Health England. *Making Every Contact Count (MECC): Consensus Statement*. 2016. Online. Available at: <https://www.england.nhs.uk/wp-content/uploads/2016/04/making-every-contact-count.pdf> (Accessed 21 October 2018)
- Public Health England. *Lambeth: Local Authority Profile 2018*. 2018a. Retrieved from file:///C:/Users/K1770867/Downloads/e09000022.pdf (Accessed 24 November 2018)
- Public Health England. *Southwark: Local Authority Profile 2018*. 2018b. Retrieved from file:///C:/Users/K1770867/Downloads/e09000028.pdf (Accessed 24 November 2018)
- Prymachuk S, Graham T, Hadad M, Tylee A. School nurses' perspectives on managing mental health problems in children and young people. *J Clin Nurs*. 2012 Mar;21(5-6):850-9. doi: 10.1111/j.1365-2702.2011.03838.x. Online. Available at: <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2702.2011.03838.x> (Accessed 24 November 2018)
- Raymond CM, Perry MD, Kayekjian KC, Braun RA, Cantu M, Bhupendra A, Chung PJ. Adolescents Perspectives on the Use of a Text Messaging Service for Preventative Sexual Health Promotion. *Journal of Adolescent Health*. 2012;51:220-225. Online. Available at: <https://www.sciencedirect.com/science/article/pii/S1054139X11006458> (Accessed 30 November 2018)
- Royal College of Nursing. *Use of text messaging services: Guidance for nurses working with children and young people*. 2016. Online. Available at: <https://www.whatdotheyknow.com/request/123704/response/306797/attach/5/RCN%20Guidance%20SMS.pdf> (Accessed 3 June 2018)
- SurveyMonkey Inc. 2017. SurveyMonkey, San Mateo, California, USA. www.surveymonkey.com
- The Kings Fund. *Secure Text Messaging with School Nursing Teams*. 2018. Online. Available at: <https://www.kingsfund.org.uk/publications/innovation-nhs/text-messaging-school-nursing> (Accessed 3 June 2018)
- UN News Centre. *Deputy UN Chief calls for urgent action to tackle global sanitation crisis*. 2013 March 21. Online. Available at: <https://news.un.org/en/story/2013/03/435102-deputy-un-chief-calls-urgent-action-tackle-global-sanitation-crisis#.VF9erzQgt8E> (Accessed 3 June 2018)
- Utting S. How teenagers got the health message. *Primary Health Care* 2004;14(2):12-14. Online. Available at: <https://journals.rcni.com/doi/pdf/10.7748/phc2004.03.14.2.12.c486> (Accessed 1 July 2018)
- Varley E, Murfin M. *An Implementation Guide and Toolkit for Making Every Contact Count: Using every opportunity to achieve health and wellbeing*. 2018. Online. Available at: <https://www.england.nhs.uk/wp-content/uploads/2014/06/mecc-guid-booklet.pdf> (Accessed 21st October 2018)
- Willoughby JF. BrdsNBz: Sexually Experienced Teens More likely to Use Sexual Health Text Message Service. *Health Education and Behaviour*. 2015;42(6). DOI: 10.1177/1090198115577377
- Willoughby JF, L'Engle KL. Influence of Perceived Interactivity of a Sexual Health Text Message Service on Young People's Attitudes, Satisfaction and Repeat use. *Health Education Research*. 2015;30(6):996-1003. DOI: 10.1093/her/cyv056