Relocation Relocation: Does the use of Virtual Reality 360 degree images of a hospice improve perception at time of referral?

Authors:

Prof. Mark Taubert, Consultant in Palliative Medicine and Senior Lecturer Cardiff University School of Medicine, Cardiff UK

Dr. Eileen Muckian, Cardiff University School of Medicine, Cardiff, UK

Abstract:

Background: *Patients treated in the community and in hospitals may be offered transfer to a hospice for symptom management . Many of these patients may be unfamiliar with this setting, and some may feel anticipatory fear of this unknown environment. Our cancer centre uses Virtual Reality headsets and 360 degree photo/video technology on a digital media pad (tablet computer) to give patients a digital tour of what the regional hospices look like, in order to help decision making.*

Aims: *To evaluate whether the use of a 360 degree visual tour of the local hospices, similar to what estate agents may offer for virtual house viewings, is useful to patients and whether it is easily implementable. To explore whether it impacts on palliative care patient perception.*

Methods: *360 degree filming and high resolution photography were undertaken as part of a quality improvement project in key areas of two local hospices, and uploaded to hospital and hospice websites, headsets and media pads. An online survey was created to assess the patient experience of the 360 degree digital views. Over a 6 month period, patients on the ward in the hospital who were willing to participate, known to the palliative care team, and/or who had an active hospice referral in place were offered a digital tour.*

Results: *Of 25 patients, 90% felt more informed about hospices after seeing the 360 degree views. 95% of patients stated they would recommend the digital hospice tour to other patients. All preferred the electronic 360 degree tour to the paper patient information leaflets. Staff members felt the 360 degree photo tour was easily integrated into their day-to-day work.*

Conclusions: *The use of 360 degree hospice views can make a significant difference to patient perception of what hospices look like and addresses the fear of the unknown. Whilst this evaluation was conducted prior to Covid-19, the use of the electronic media tour of hospices went up significantly in our inpatient unit during the pandemic, due to patients and relatives not being able to visit the hospice prior to deciding on relocation to this setting.*

Introduction

Patients being treated in hospitals and cancer centres are sometimes referred and transferred to hospices for symptom management, palliative care, respite or care in the last days of life. Studies have shown that there is a low level of awareness of palliative and hospice care respectively, and what the settings where it is provided look like. There are many misconceptions about purpose and setup [1]. Out-of-hours admissions can also increase the anxiety felt about going to a hospice [2]. Studies have found that there is a significant lack of awareness of hospices and what they can do, and that explanation can help break down such barriers [3] [4].Good advance care planning can provide information on a person's preferred places of care and even where they may wish to die. [5] [6] [7] Visiting restrictions to hospices may have had an effect on being able to physically go to the locations for a simple look around, something that happened quite routinely pre-pandemic.

Virtual Reality (VR) is a system that allows an individual to become immersed in, interact with and explore a computer-generated environment. By creating a 360◦ photographic or cinematic image or video, it can create an illusion that makes individuals feel present in the environment shown. [4]

Velindre Cancer Centre in Cardiff uses Virtual Reality (VR) headsets and 360◦ technology to give staff, students and patients/carers an experience of services including radiotherapy and has also used simulation based learning. [8] [9] Previous experience from video learning tools has been very positive from patients and carers alike.[9] The hope is that this helps users feel more comfortable in transferring to these settings by allowing the patient to be immersed in this environment and gain an impression. The simple aim of this project was to assess the practicality and applicability of this already-in-use technology in a ward setting, and to evaluate patient/carer and staff views.

Aims & Objectives

This service evaluation aims to assess how patients and carers who are in a cancer hospital inpatient setting and have been offered a relocation to the hospice inpatient setting, evaluate a 360 degree virtual tour of the hospices they are referred to.

In order to achieve these aims –

- 360 degree photographic images were produced by going to 2 local hospices, who gave permission for 360 degree filming to take place
- Inpatient settings were photographed/filmed (without patients or carers visible, but some staff who gave their consent)
- Images were uploaded to tablet media pad computers that can be used by inpatients in Velindre Cancer Hospital. These images were integrated into a virtual tour
- A survey was created to be completed by patients/carers being seen by the palliative care team
- A free text box was used in the survey in order to capture feedback

- The survey attempted to determine whether using the VR headsets and 360 degree views change patients opinions/view of hospices
- A website hosts one of the hospice's 360 degree views and can be accessed via this link: https://ths.li/y3vtf

Methodology

As part of a 4th year Medical School Quality Improvement Project, this project was selected as a service evaluation which could benefit from Plan-Do-Study-Act (PDSA) evaluation. It went through Cardiff University Medical School review and scrutiny processes, and due to this project evaluating an already existing service was deemed worthy of a survey approach.

Therefore, in order to carry out the aims and objectives of this project, a survey was designed and created using an online survey software tool. The survey was carefully written and scrutinised by palliative care team members, and agreement was reached on which wording to use. Both the 360 degree photographic views and the survey were easily accessible on an electronic tablet computer media pad supplied by the hospital, and the authors of this paper helped facilitate this process for patients less accustomed to the technology. In terms of individuals being surveyed, inclusion criteria were broadened to not only those that had an active hospice referral but also any patient on the ward that was being seen by the palliative care team and potentially would require discussion about follow-up with hospice services, including community services, in the near future.

The survey was handed out and left with patients by a member of the palliative medical, nursing or administrative team, between May and September 2019. Media pads which were used were secure and had a protective casing which allowed for cleansing after and before each use. Patients (and when present, their significant others) were shown the relevant hospice tour of the place they might go to. The survey was then opened for them and left at their bedside, so they could fill it in in privacy and submit. They were also offered a paper patient information leaflet version of the hospice leaflets that each hospice provides.

Questions were as follows:

Q1 Have you ever been referred to a hospice before?

Q2 After seeing the 360 degree views of the hospice, which of the following best describes how you would feel if you were referred to the hospice?
Very Content, Content, Neither Content nor Discontent, Discontent, Very Discontent

Q3 Would you recommend the digital hospice tour to patients being referred to the hospice? (Or preference for paper leaflet?)

Q1: Staff: Are these 360 degree hospice views easily integrated into your work setting?

Q2: After having used both 360 degree Virtual Reality Headsets and the tablet computers, which of the above is more easily completed with pts? Headset or Tablet Computer?

The survey also determined whether the patient in question had ever been an inpatient in a hospice previously, as this may have an impact on how they view these settings.

Each morning for the duration of this project, the palliative care team would discuss patients who may benefit from transfer to an inpatient palliative care setting, which would automatically make them eligible to view the 360 degree views after a discussion. The survey was uploaded to the tablet computer given to patients/carers. It was anonymous and once completed was logged with the other responses for the purpose of this evaluation.

Results

Of 25 patients, only one had been referred to a hospice before. 90% of respondents felt 'very content' or 'content' about referral to a hospice after viewing the 360 degree photo tour (Figure 1). The patient who had been referred previously commented positively on the 360 degree photo tour but answered 'neither content/nor discontent' in his response as he/she had already been to the setting and it did not influence his/her decision to go. Also, 95% of patients/relatives stated they would recommend it to other patients being referred to hospices (Figure 2), whilst one person preferred the paper leaflet over the 360 degree images. All staff (n= 6) surveyed felt the 360◦ tour was easily integrated into their work, and preferred using tablet computers over paper leaflets and more cumbersome (in their view) VR headsets, with the latter being more challenging to set up.

Figure 1:

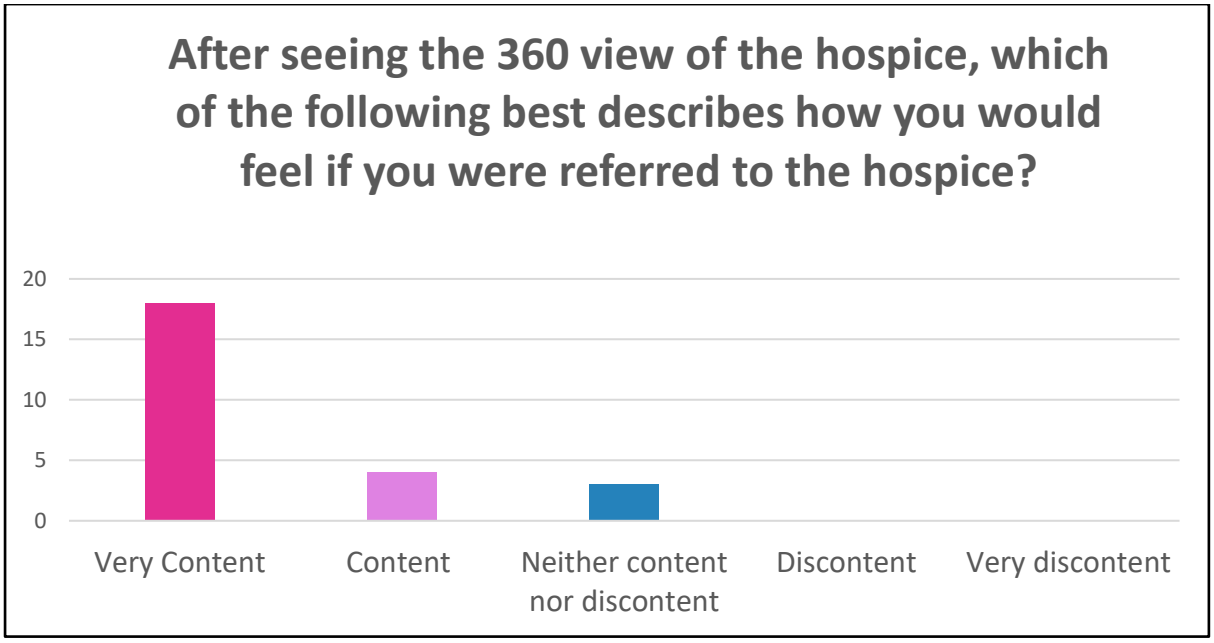
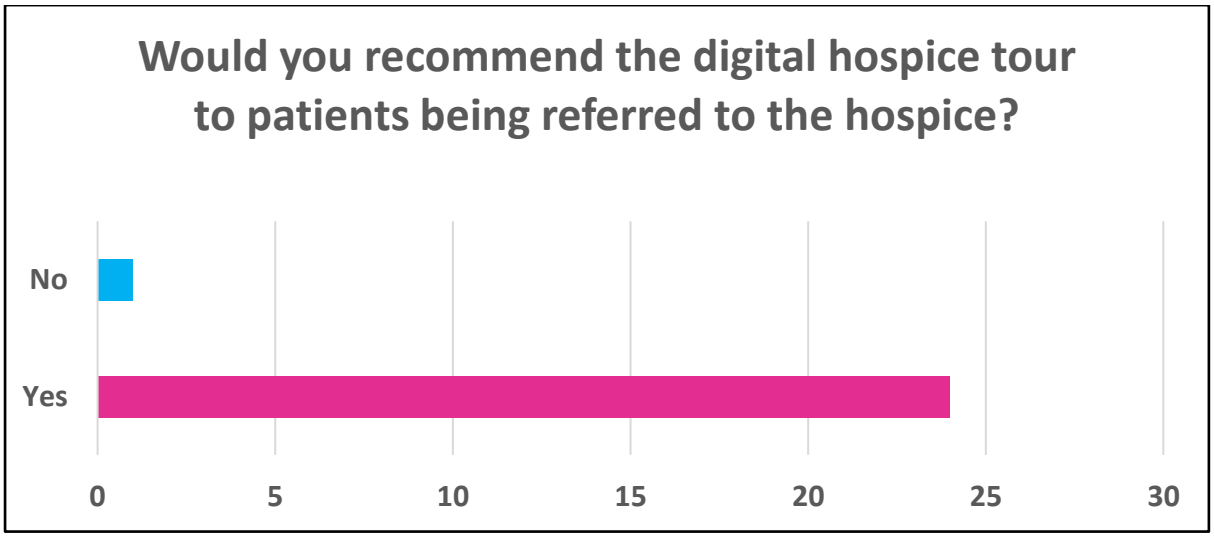


Figure 2:



Conclusion

These results are from a small cohort of patients, but form a potentially useful and important addition to the existing literature. Importantly, nearly all of the patients found this virtual tour useful, with only one stating that it did not add anything for her/him as she/he had already been to the hospice once beforehand. One person felt the paper leaflet more useful than the virtual tour. The 360 degree virtual tours are now fully integrated into daily working on the wards, with paper leaflets handed out as an alternative or in addition. Patients and their families/significant others can also access the tours via this link: https://ths.li/y3vtf

Staff were surveyed how they felt about the use of a tablet computer, and generally found it easy to integrate when using the tablet computers. Interestingly, when offered the use of a VR headset to give to the patient, staff felt that this would be more cumbersome and challenging to set up, and the preference was for a tablet computer.

References

[1] Shalev A, Phongtankuel V, Kozlov E, Shen M, Adelman R, Reid M. Awareness and Misperceptions of Hospice and Palliative Care: A Population-Based Survey Study. American Journal of Hospice and Palliative Medicine®. 2017;35(3):431-439. doi: 10.1177/1049909117715215

[2] Taubert M, Noble SIR, Nelson A What challenges good palliative care provision out-of-hours? A qualitative interview study of out-of-hours general practitioners BMJ Supportive & Palliative Care 2011;1:13-18. Doi: 10.1136/bmjspcare-2011-000015

[3] Cagle J, Van Dussen D, Culler K, Carrion I, Hong S, Guralnik J et al. Knowledge About Hospice. American Journal of Hospice and Palliative Medicine®. 2014;33(1):27-33. doi: 10.1177/1049909114546885

[4] Davison SN, Jhangri GS, Koffman J Knowledge of and attitudes towards palliative care and hospice services among patients with advanced chronic kidney disease BMJ Supportive & Palliative Care 2016;6:66-74.

[5] Rietjens J, Korfage I, Taubert M Advance care planning: the future BMJ Supportive & Palliative Care 2021;11:89-91. 10.1136/bmjspcare-2020-002304

[6] Abel J, Kellehear A, Millington Sanders C, Taubert M, Kingston H. Advance care planning re-imagined: a needed shift for COVID times and beyond. Palliative Care and Social Practice. January 2020. doi:10.1177/2632352420934491

[7] Taubert M, Webber L, Hamilton T, Carr M, Harvey M. Virtual reality videos used in undergraduate palliative and oncology medical teaching: results of a pilot study. BMJ Supportive & Palliative Care. 2019; bmjspcare-2018-001720. doi: 10.1136/bmjspcare-2018-001720

[8] Taubert M, Norris J, Edwards S, et al. Talk CPR - a technology project to improve communication in do not attempt cardiopulmonary resuscitation decisions in palliative illness. BMC Palliative Care 2018; 17 (1): 1-12 ; article number: 118. 10.1186/s12904-018-0370-9

[9] Evans L, Taubert M State of the science: the doll is dead: simulation in palliative care education BMJ Supportive & Palliative Care 2019;9:117-119. 10.1136/bmjspcare- 2018-001595