Title of research (in English)

ETGAR – A medical school's partnership with hospitals across the Galilee to innovatively tackle transition between care settings

Title of research (in Hebrew)

אתג"ר – שותפות חדשנית בין פקולטה לרפואה ובתי חולים בגליל לשיפור המעבר מבית חולים לקהילה

אתג"ר – שותפות חדשנית בין פקולטה לרפואה ובתי חולים בגליל לשיפור המעבר מבית חולים לקהילה

פרופ' מרי רודולף וד"ר סיון שפיצר שוחט

רקע מדעי

ישנו צורך להכשיר ולפתח מיומנויות סטודנטים לרפואה להתמודדות עם אי-שוויון בבריאות[1]. בתי ספר לרפואה בארה"ב פיתחו מרפאות המופעלות על-ידי סטודנטים ומעניקות שירות למחוסרי ביטוח בריאות, כדרך לחשוף סטודנטים ולהקנות להם את הכישורים לעבודה באזורים נכשלים[2]. במדינות כגון ישראל, בהן קיים ביטוח בריאות ממלכתי, ישנו צורך בפיתוח שירות אחר שיאפשר לסטודנטים לרכוש ניסיון בסביבות בהן קיימים פערי בריאות. אתגר, הוא שירות חדשני המופעל על ידי סטודנטים ותומך באוכלוסיות הנזקקות ביותר ברחבי הגליל בנקודת זמן קריטית – המעבר מבית חולים חזרה הביתה[3]. הרעה במצבו הבריאותי של המטופל בנקודת זמן זו יוצרת עומס ועלויות כלכליות משמעותיות הן למערכת והן למטופל.

מטרות המחקר

מטרתנו היתה להעריך את אתגר ולבחון את השפעתו על המעבר של מטופלים מבית החולים חזרה הביתה ועל הידע, הכישורים והביטחון של סטודנטים במתן השירות. כמו כן, בחנו גם את החסמים והזרזים בהטמעת השירות.

שיטות המחקר

אתגר נערך בארבעת בתי החולים המסונפים לפקולטה, ומשרתים אוכלוסייה אתנית מגוונת ממעמד סוציו-אקונומי בינוני-נמוך ברחבי הגליל. השירות הוצע למאושפזים במחלקות: פנימית, כירורגיה, ילדים, נשים וגריאטריה. סטודנטים עבדו בזוגות, ניגשו למטופלים ותיאמו ביקור בית כשבוע מיום השחרור. הסטודנטים הכינו מכתב שחרור בשפה פשוטה שעבר את אישורו של רופא בכיר, ובמידת הצורך תורגם לערבית/רוסית/אנגלית. במהלך ביקור הבית, סטודנטים עברו עם המטופל על המכתב המפושט לוודא שהוא מובן. הם בדקו תרופות, העריכו מצב סוציאלי וקישרו בין המטופל לשירותי רפואה או רווחה במידת הצורך. סטודנטים הגישו דוח על ביקור הבית יחד עם מכתב השחרור המפושט לבדיקה וקבלת משוב וציון כחלק מחובותיהם לקבלת התואר.

הכשרה אינטנסיבית ניתנה בתחילת הסבבים הקליניים וכללה סדנאות על תקשורת עם מטופלים, כתיבה בשפה פשוטה וסימולציות עם שחקנים. בכל סבב, נערכו הדרכות בהן נדון ביקור הבית ונערכה חזרה וחיזוק לכישורים הנדרשים. רופאים בכירים סייעו במתן תשובות לנושאים קליניים כנדרש.

הערכה של השפעת אתגר על מעבר מטופלים מבית חולים לקהילה

כדי להבין את תפיסות המטופלים אודות תהליך השחרור הועבר שאלון Care Transition Measure-3 במהלך ביקור הבית ושוב במהלך הריאיון הטלפוני בקרב מטופלים שלוו על ידי סטודנטים מלגאים. הבעיות עימן התמודדו מטופלים והפעולות בהן נקטו סטודנטים נותחו מדוחות הסטודנטים. סטודנטים דיווחו על שימוש בתרופות ואי-התאמה בתרופות באמצעות Medication Discrepancy Table. ראשי מחלקות, מטופלים וסטודנטים רואיינו על תרומת השירות. שיעורי האשפוזים חוזרים למטופלי אתגר בהשוואה למטופלים בקבוצת ביקורת מותאמת נבחנו.

הערכת ידע, עמדות וכישורי סטודנטים

שאלונים לפני ואחרי בחנו את מידת הביטחון של סטודנטים בביצוע השירות, עמדותיהם, וידע אודות האוכלוסייה המקומית. בחנו גם את כשורי הפישוט הלשוני שרכשו סטודנטים באמצעות ניתוח המכתבים המפושטים הראשונים והאחרונים בשנתון 2016-2017 ואת יכולת הסטודנטים לזהות מאפיינים חברתיים המשפיעים על בריאות (SDH) באמצעות ניתוח דוחות ביקורי הבית 2015-2017. קיימנו ראיונות עם ראשי מחלקות, מטופלים וסטודנטים.

הערכת תהליך הטמעת התכנית

בדקנו את פרופיל המטופלים שהשתתפו באתגר כדי לבחון את המידה בה השירות ניתן למטופלים נזקקים. זרזים ואתגרים בהטמעת התכנית נותחו מתוך ראיונות עם בעלי העניין וקבוצות מיקוד.

אישורים הושגו מוועדות האתיקה של ארבעת בתי החולים ומוועדת האתיקה של הפקולטה.

הממצאים

334 סטודנטים השתתפו באתגר בין השנים 2015-2019 וביקרו 1010 מטופלים: 916 מבוגרים בגילאים 17.0±66.5 שנים ו-93 ילדים. 86% מהמטופלים היו יהודים ו-42.8% מהם הוערכו על-ידי סטודנטים כבעלי מצב רפואי או סוציאלי מורכב.

השפעה על מעבר מבית חולים לקהילה

דוחות סטודנטים הראו כ-4 פעולות נעשו בממוצע בביקור בית, כאשר יותר ממחצית (59%) עסקו בהסבר על תרופות או מצב רפואי.

שחרור: תגובות (n=960) ל-CTM-3 הראו שביעות רצון מהתייחסות להעדפות המטופל (0.87± 3.4), קבלת מידע (0.91± 3.25) ומידת הבנת התרופות (0.93± 3.28). מטופלים בראיון הטלפוני דיווחו על שיפור משמעותי בקבלת מידע (0.95± 3.2 לעומת 0.63± 3.71 p<0.001) והבנת תרופות (0.96± 3.26 לעומת 0.73± 3.69 p<0.001) בעקבות ביקור הבית (n= 227).

תרופות: 916 מטופלים לקחו בממוצע 3.9±6.5 תרופות. סטודנטים זיהו 1013 אי-התאמות בתרופות ב-46% מהמטופלים. אי-התאמות נבעו מטעויות ברמת המערכת וברמת המטופל.

עמדות בעלי עניין: ראשי מחלקות תיארו את היתרונות באתגר עבור מטופלים במחלקות פנימיות וגריאטריה עקב שילוב של בדידות, עוני, קושי ברכישת תרופות והזנחה בריאותית. הם ציינו שאמנם הסטודנטים לא תמיד הגיעו למטופלים הנזקקים ביותר, אך הפישוט לשוני של מכתב השחרור יחד עם ביקור הבית העלו את ההיענות להוראות רפואיות ושיפרו את בריאותם של מטופלים. ראיונות עם סטודנטים וקבוצות מיקוד חיזקו עמדות אלו. מטופלים סברו שאתגר מסייע מאוד (0.51± 4.75 בסקאלה של 1-5).

ידע, עמדות וכישורי סטודנטים

עמדות וביטחון: אחוז הסטודנטים המשיבים ירד מ-87% ל-30% בסוף הקורס ומהווה מגבלה. שיפור משמעותי נמצא ברמת הביטחון לניהול מפגש עם מטופל (0.88± 2.96 לעומת 0.66± 3.55 p<.001), כישורים (1.23± 5.0 לעומת 1.23± 5.4 p<.05), וידע אודות אוכלוסיות הגליל (0.87± 2.46 לעומת 0.72± 2.74 p<.05).

כישורי תקשורת כתובה למטופלים עם אוריינות נמוכה: 85 מכתבים נותחו. נמצא שיפור בכל הפרמטרים (סקלה של 1-5): שימוש בשפה פשוטה (0.89± 3.6 לעומת 0.77± 4.1, p<.001), סיפור הנרטיב (1.14± 3.2 לעומת 1.17± 4.0 p<0.001), ומבנה המכתב (0.89± 3.8 לעומת 0.89± 4.1 p<.056).

יכולת זיהוי מאפיינים חברתיים: ניתוח של 177 דוחות שנכתבו על-ידי 105 סטודנטים, הראה כשירות בזיהוי SDH. תמיכה חברתית וזיהוי מצבים רפואיים היו התמות המרכזיות. סטודנטים זיהו נושאים אלו כמשפיעים על איכות המעבר ופעלו לשפרם.

ראשי מחלקות, הסטודנטים והמטופלים העידו על התרומה החינוכית של השירות שכללה העמקת ההבנה אודות מחלות, אבחון, טיפול ותמיכה במטופלים. מנהלי מחלקות תיארו כיצד סטודנטים פיתחו תקשורת אמפתית והבינו את הפער שקיים בין בית חולים לקהילה. מטופלים דירגו גבוה את יכולת הסטודנטים להקשיב ולהבין את מצבם (3.93±0.27, scale of 1-4).

תהליך הטמעת השירות

זרז מרכזי בהטמעת אתגר היה הפיכתו לקורס חובה. מטופלים שהשתתפו באתגר לרוב נזקקו לשירות בעקבות גיל, מצב סוציו-אקונומי, מורכבות קלינית ותלות, כאשר ל-84% מהמטופלים היו שתיים או יותר מתכונות אלה. חסמים מרכזיים כללו מטופלים ערבים שלא יוצגו כראוי בתכנית בגלל חסמי שפה וחוסר תקציב לנסיעות לאזורים מרוחקים. בנוסף, מרבית הסטודנטים חששו לבצע את ביקורי הבית לבד ולכן פחות מטופלים זכו לשירות משתוכנן. חלק מהסטודנטים התנגדו 'לבזבוז זמן' לבקר מטופלים בבית והעדיפו לבחור מטופלים 'קלים' מאשר מטופלים נזקקים. תקשורת עם 24 מחלקות ב-4 בתי חולים שונים ופקולטה הממוקמת בצפת היתה גם היא אתגר.

זרזים בהטמעת התכנית כללו תמיכה של הנהלת הפקולטה שהאמינה כי אתגר הוא רכיב חיוני בהתפתחות פרופסיונלית כמו גם תמיכה בקרב חלק מצוות הסיעוד והרופאים במחלקות. סטודנטים, ביחוד אלה שקיבלו מלגות, עזרו אף הם בפירוק ההתנגדויות.

מסקנות

למרות קיומו של חוק ביטוח בריאות ממלכתי התשנ״ד, פערי בריאות ממשיכים להתרחב. שירות אתגר הצליח במטרתו להכשיר סטודנטים לעבוד עם מטופלים נזקקים, תוך הענקת שירות למטופלים אלה. מעל 1000 מטופלים, מרביתם נזקקים, לוו בשנים 2015-2019. סטודנטים פעלו לשפר את מצבם, ולאור עדות המטופלים, שיפרו את חזרתם הביתה. רגישות סטודנטים להשפעתם של מאפיינים חברתיים וכישוריהם לכתוב בשפה פשוטה השתפרו.

אתגר עורר עניין בינלאומי כמודל המתייחס לאוריינות רפואית ופערי בריאות בעת תהליך השחרור, נקודה פגיעה במסעו הרפואי של המטופל. מחקר זה מעניק תובנות לחסמים הקיימים במערכות בריאות והמלצות להתמודדות עימן. מאחר וישראל אינה לבד במסע אחר פתרונות לצמצום אי-שוויון, אתגר יכול להוות מודל למערכות בריאות נוספות.

המלצות למדיניות

- אתגר הוא מודל ללימוד מאפיינים חברתיים, אוריינות רפואית וכשירות תרבותית. ניתן להרחיב הוראה של מודל זה למקצועות בריאות נוספים.
- מומחיות אתגר משמשת למשרד הבריאות בבחינתו כיצד ניתן להעביר למטופלים מידע מפושט בתהליך השחרור
- ניתן להרחיב את שירות אתגר למרפאות חוץ ואנו נמצאים כעת בדיון להשקת פיילוט במרכז הרפואה פורייה.

מקורות

1. Marmot Michael. *Social Determinants of Health- What Doctors Can Do*.; 2011. http://www.bma.org.uk/-/media/files/pdfs/working for change/improving health/socialdeterminantshealth.pdf.
2. Taylor MA, Hollett YR, Anderson JP, Schwenk TL. Educational Value of a Free Medical Clinic Operated by Medical Students. *Fam Med*. 2016;48(2):127-131. http://www.ncbi.nlm.nih.gov/pubmed/26950784. Accessed March 24, 2016.
3. Spitzer-shohat S, Sagi D, Schuster M, et al. Teaching the interplay between Social Determinants of Health (SDH) and Health Outcomes: The ETGAR student-delivered service. *J Gen Intern Med*. 2019.

Comprehensive scientific report - English
ETGAR – A medical school's partnership with hospitals across the Galilee to innovatively tackle transition between care settings

SCIENTIFIC BACKGROUND

The variability and prevalence of health disparities are a source of public concern. Although most of the causes of health disparities, namely housing, education and employment[1] are external to health systems, the role and responsibilities of physicians in dealing with the problem have been discussed in recent years[2–4]. Physicians and health professionals are responsible for working individually and collectively in an attempt to reduce existing health disparities[5]. In order to achieve this, there is a need to expand the range of skills and activities required of physicians during their medical studies to ensure that doctors of the future can take an active role in reducing health inequities. A recent report by the American Medical Association[6] focuses on the urgency for medical schools to develop a coherent, consistent and holistic framework, in partnership with the community, to educate and train physicians about the social factors underlying health disparities[7,8].

Medical students in teaching hospitals encounter needy patients on a daily basis. However, the literature indicates that these encounters do not lead to greater understanding or empathy for the difficulties faced by patients and may even erode positive attitudes towards needy populations[9]. Moreover, clinical courses taught in medical schools tend to focus on basic clinical skills and rarely integrate physician-patient communication with vulnerable populations into the curriculum[10]. There is therefore a need for practical training, that ensures that students acquire the skills required to work towards reducing health inequities.

Several medical schools have developed clinical services, managed and operated by students, to provide the necessary exposure and experience to work in disadvantaged areas. These initiatives have been implemented mainly in the United States, which suffers from wide health disparities, and where a large proportion of the population is without health insurance. Student-run clinics can be found in more than 60% of American medical schools as well as in other medical schools around

the world[11]. Staffed by students, the clinics have been found to contribute both to society and the quality of professional teaching[12]. In most cases, the clinics are located in areas with needy communities and disadvantaged neighborhoods in order to make primary medical care available[13]. Students are responsible for the logistics and operation of the clinic while medical staff supervise the service provided[14].

Clinics run by students present a framework for the creation of academic-community partnerships: the clinics bridge the gap between the academic institution and community organizations, students acquire a unique educational experience, and patients receive access to medical services[15]. It has been reported that students working in these clinics develop enhanced compassion for disadvantaged populations, as well as improved competence in communicating with patients from different cultural backgrounds[12]. Students report that their work in these clinics allows them to acquire unique knowledge, with over 78% feeling that the experience had a profound impact on their medical education and their role as future physicians[16].

In countries such as Israel, where universal health insurance exists, accessibility and delivery of health services are not the principal setting where health disparities are evident. However, student-run clinics have also been implemented in countries that have public insurance coverage such as Canada or Australia, but in these cases, the clinics primarily serve populations in areas where access to medical services is limited[17,18]. The idea of community clinics operated by students in Israel would not contribute significantly to reducing existing health disparities or training and exposing students. There is a need for alternatives that will enable students to learn experientially and gain experience in environments where needy patients can receive essential treatment.

Bar-Ilan University's Faculty of Medicine has developed a unique service that is operated by students and supports the neediest populations throughout the Galilee, while providing training and experience in situations where health disparities are evident. The service focuses on a critical point in the patient's health journey - the transition from hospital to home. The transition may lead to deterioration in patients'

health and can result in significant expenses for both the patient and the healthcare system[19]. The literature shows that patients who understand and know how to manage their medical condition recover more quickly and experience less stress[20]. However, when patients do not understand what is required at the time of discharge, they adhere less well to medication regimes, have lower rates of follow-up in the community, and have increased rates of re-admission to hospital[21,22]. This is particularly prevalent in populations of lower socio-economic status, where health literacy is low due to a variety of cultural and social factors[23–25].

ETGAR (The Hebrew word 'Challenge', is an acronym in Hebrew for Health Literacy, Support and a Bridge between Medicine and Community), was developed by the Azrieli Faculty of Medicine and piloted through a grant from the Planning and Budgeting Committee (Vatat) of the Council for Higher Education. The goal of ETGAR is to reduce the difficulties experienced by many patients in their transition from hospital back home, and to help patients understand their medical condition and the instructions given at the time of discharge through the services of medical students who meet the patient during their hospitalization and provide a home visit after discharge.

During the pilot year, 35 students worked in the ETGAR service in the Faculty's four affiliated hospitals across the Galil where they were undergoing their clinical training. They received a scholarship from Vatat that enabled them to deepen their medical knowledge about the unique needs of disadvantaged populations and the difficulties faced by health care professionals in the encounter with them. Evaluation showed that students acquired skills that enabled them to communicate better, verbally and in writing, with patients with low medical literacy and patients reported high satisfaction with the service[26,27].

In light of the pilot experience, the Faculty of Medicine decided to extend ETGAR and integrate it into the medical training curriculum of all students as a compulsory course. Further scholarships have been available each year to forty students to allow them to expand the service and assist in its implementation in the hospitals.

The current study evaluates the full ETGAR initiative and examines its impact on both patients and students. It focuses on the quality of patients' transition from

hospital to home as well as the impact on knowledge, confidence and skills of the students who provide the service.

RESEARCH OBJECTIVES

A. To ascertain the impact of ETGAR on
   - patients' transition between care settings including their understanding of their medical condition, medications they need to take, satisfaction with the service and readmission rates
   - students' attitudes and skills when assisting vulnerable populations in their transition from hospital back to the community.

B. To ascertain key stakeholders' perceptions of the benefits of ETGAR and understand the barriers and facilitators in implementing such a service.

METHODOLOGY

The setting

The research was conducted in four hospitals affiliated with the Azrieli Faculty of Medicine of Bar-Ilan University: the Galil Medical Center in Nahariya, Baruch Padeh Medical Center in Poriya, Ziv Medical Center in Safed and AMMS Hospital in Nazareth. The hospitals serve the 1.4 million residents of the Galilee region, from the Golan heights, Metula and Nahariya in the North to Nazareth and its surrounding villages in the south. The Galilee is home to ethnically diverse and low-socioeconomic populations, among whom striking health inequities are apparent in life expectancy, infant mortality, prevalence of chronic diseases, and access to care in comparison to other regions in Israel[28]. Patients were recruited by medical students from the internal medicine, surgery, pediatric, gynecology and geriatric departments.

The ETGAR Service

The service was offered to patients identified by staff or students as needing support due to the complexity of their medical condition, inadequate Hebrew, poor medical literacy, or suboptimal social circumstances/ poverty. Students, who worked in pairs or threes due to concerns regarding safety, approached the patients prior to discharge, explained the service and arranged a home visit within a week of

discharge. They then prepared a simplified discharge letter for the patient in plain language, based on the formal hospital discharge summary. The letter was approved and signed off by a senior doctor in the department, and was translated into Arabic, Russian or English if required.

During the home visit, students reviewed their simplified discharge letter with the patient to make sure that he or she understood their condition and the medical instructions. They then checked the patient's medications, made sure that social support was adequate and that patients were linked to community services when necessary. Where problems were identified students contacted hospital staff, the family doctor or social services as appropriate.

Two weeks following the visit students contacted their patient by telephone to check on progress and ask if there were any difficulties that had not been resolved. Students finally completed a form about the encounter and wrote a report of the home visit which they submitted along with the simplified discharge letter to the ETGAR team for feedback.

Training the students

Students had an intensive training day at the start of their clinical rotations, focusing on the competences required to support patients following their discharge from hospital. The day involved workshops on communicating with vulnerable patients and writing in plain language, and simulations with actors around approaching patients in hospital and conducting a home visit.

During each of the four rotations, tutorials were held in the participating Departments led by ETGAR tutors. The purpose was to discuss their experiences, and reinforce their skills in writing in plain language, checking medications, and knowledge of community services. Senior department physicians were available as necessary to answer concerns regarding ETGAR patients.

Assessment of students' work

The students submitted their simplified discharge summaries and home visit reports at the end of each rotation. They received a mark along with detailed written

feedback to help them improve their skills. The mark contributed ultimately to their medical degree.

EVALUATION FRAMEWORK

The evaluation focused on the quality and perceptions of patients' transition home and the benefits of ETGAR as a service, the educational impact on students delivering the service and the process of implementing the service in participating hospitals.

A. Evaluation of ETGAR's impact on the quality of patients' transition in care to the community

1. Problems encountered and actions taken by students: In order to gain a clear idea of practical benefits to patients, students' home-visit reports were analysed for problems encountered and action taken.

2. Patients' perceptions of their transition in care. The Care Transition Measure-3 (CTM3)[29,30] was administered during the home visit, and was repeated two weeks later for the subsample of patients visited by students receiving scholarships. This was achieved via phone interview by an independent researcher. The CTM3 comprises three items that examine the extent to which hospital staff addressed the patient's preferences for ongoing treatment, if the information provided was adequate and patients' understanding of the medications they were prescribed.

3. *Medication adherence.* Students checked the patient's medications with the patient and identified any discrepancies between the regime listed in the discharge letter and the medications actually being taken. They used the Medication Discrepancy Table (MDT)[31] to report inconsistencies and whether these were due to patient or health system errors.

4. *Key stakeholders views*.

- Students - Ten focus groups involving 67 students and individual interviews with 12 students were held at the end of the course to ascertain students' views regarding the value of ETGAR.
- Staff - Interviews were also held with 13 heads of department from across participating hospitals by an independent researcher.

- Patients - Patients' views were obtained during the follow up telephone interview. They were asked about the visit, any benefits, and if they would recommend ETGAR as a routine service (on a scale of 1-5).

5. *Readmission rates.* Rate of re-admission for ETGAR patients from the three principal hospitals (Ziv, Poriah and Nahariya) are in process of analysis through extraction of data from the Ofek system, at 30- and 90-days following discharge. Our intention is to compare their rates with control patients matched for department, month of admission, duration of admission, age and gender.

B. Assessment of the knowledge, attitudes and skills of students working in the ETGAR service

The educational impact was ascertained through questionnaires, review of students' submitted work, interviews with students and staff, and patient feedback.

1. *Attitudes and confidence.* Attitudes towards working with disadvantaged populations were drawn from our annual social accountability survey[i] which was administered on the training day and at the end of the course. The intention was to compare the results with a control group of students, but this was not possible once ETGAR became a required course for all students. The questionnaire[32] includes eight items that examine students' confidence handling a medical encounter at home, attitudes toward patient centeredness, care taker skills and knowledge of the Galilee population.

2. Acquisition of written communication skills for patients with poor health literacy. Students' competence in writing in plain language was ascertained through detailed analysis of their simplified discharge letters, focusing on structure; use of language (ideally 6th grade level); avoidance/explanation of medical jargon; the narrative and how well it allowed the patient to understand and remember the essence of their hospital stay; clarity of the medication list and post-discharge instructions. The analysis was conducted on first and last letters of students in their 'long rotations' (pediatrics, gynecology and surgery) during the academic year 2016-2017.

3. *Ability to identify social determinants impacting on patients' health.* Students' home visit reports during the first two years of the ETGAR service

(2015-2017), were analysed using content analysis, employing the biopsychosocial model[33] to categorise issues raised. Reports were also compared quantitatively by level of elaboration, gender and class.

4. *Stakeholders' views.*

- Patients were asked at their telephone interview about the student's ability to listen and understand their situation (on a scale of 1-4).
- Students themselves were asked at interview and in focus groups about competencies they had gained.
- Heads of department were also asked for their views when interviewed.

C. Evaluation of the implementation process:

1. Participating patients. The profile of participating patients was determined from sociodemographic data collected by the students at the home visit to examine the extent to which the service was reaching vulnerable individuals

2. The process of implementing the ETGAR service. An examination of the facilitators and challenges underlying ETGAR's implementation were obtained through reflection by the Faculty ETGAR team, and analysis of the in-depth interviews with the heads of department and students.

Data analysis

Quantitative

Descriptive statistics were employed in analyzing the profile of patients and students participating in the research, and medication discrepancies, and t-tests were used to examine students' confidence in managing care transition, their attitudes and their competence in writing in plain language. Change over time in patients' care transition measure was examined by un-paired t-test as lack of some patients' ID numbers made pairing impossible.

Qualitative

Interviews with heads of department and students were recorded, transcribed and subjected to explanatory content analysis. A codebook was developed, based on our explanatory framework derived from the biopsychosocial model. Three of the ETGAR team coded interviews, discrepancies were discussed, and codes if needed revised to achieve interrater reliability. Additionally, notes were made during phone

interviews and focus groups with students and subjected to thematic analysis for deriving the main themes and points addressed by interviewees.

Ethics

The study received the approval of the ethics committees of all hospitals participating in the project. The Bar Ilan Faculty of Medicine ethics committee approved analysis of students' work.

RESULTS

Participants

Table 1 and 2 provides details of the numbers of students and patients participating in the service between 2015 to 2019.

Table 1: Numbers of students and patients participating in the service

Academic year	**Pilot year 2015-6**	**2016-2017**	**2017-2018**	**2018-2019**	**Total**
Number of students on the required course	35	94	92	113	334
Number of patients visited	93	120	149	175	537
Number of students with scholarships to visit additional patients	Not relevant	24	35	38	97
Number of additional patients visited	-	107	187	179	473
Total number of patients visited	93	227	336	354	1010
Departments involved (*required course only)*	Surgery- 6 Medicine- 30 Cardio- 14 Geriatric- 5 Other- 8	Surgery- 31 Medicine- 34 Pediatric- 27 ObGyn- 17 Geriatric- 3	Surgery- 40 Medicine- 52 Pediatric- 23 ObGyn- 26 Other- 5	Surgery- 47 Medicine- 24 Pediatric- 42 ObGyn- 50 Other- 4	

Table 2: Details of patients participating in the ETGAR service

	Pilot year 2015-6	**2016-2017**	**2017-2018**	**2018-2019**	**TOTAL**
Number of children	1	27	23	42	**93**
Number of adults	92	199	313	312	**916**
Age of adults (mean±SD)	71.4± 14.2	65.8± 17.8	66.6± 15.4	65.6± 18.3	**66.5± 17.0**
Complex condition* (scoring 4-5 on scale	33.7%	42.2%	42.8%	45.8%	**42.8%**

of 5)					
% of non-Jewish patients	14%	14%	16%	13%	**14%**
Hospital	Hospital identification not collected in pilot year systematically	Nahariya-42% Ziv- 41% Poria- 14% Nazareth-3%	Nahariya-54% Ziv- 22% Poria- 16% Nazareth- 8%	Nahariya-51% Ziv- 23% Poria- 22% Nazareth- 4%	Nahariya- 50% Ziv- 27% Poria- 18% Nazareth- 5%

* students overall assessment taking into consideration chronic illness, number of medications, management, and needs socially/in the community

A. Evaluation of ETGAR's impact on the quality of patients' transition from the hospital to the community

1. Problems encountered and actions taken by students

Table 3 shows a summary of the problems encountered and actions taken by students from analysis of students' reports, so providing an idea of the components of the service in practice.

Table 3: Categories of reported action taken by students during home visits in the pilot year and the last academic year

Action taken	Number of actions (%)	
	Pilot year	**2018-2019**
Explained/organized medications	89 (25%)	281 (26%)
Explained medical conditions	65 (18%)	314 (29%)
Helped in making appointments with specialists	59 (17%)	15 (1%)
Advised patient to see their family physician	56 (16%)	180 (17%)
Helped with a variety of social problems such as linking to social security benefits	45 (13%)	40 (4%)
Addressed accessibility issues in the home	30 (8%)	18 (2%)
Advised re: health promotion, smoking and lifestyle behaviors	12 (3%)	114 (11%)
Consulted with hospital staff	0	34 (3%)
Other	0	86 (8%)
Total actions taken	**356**	**1068**
# Actions per visit (mean ± sd)	**4.0 ± 2.1**	**3.0 ± 1.0**

2. Patients' perception of their transition in care

The Care Transition Measure-3 (CTM3)[30] examined the extent to which hospital staff addressed patients' preferences for continued treatment, if they had received adequate information and their understanding of their medications. Patients' initial responses (n=960) to the CTM-3 measure were relatively high. The latter two

questions were asked again to patients visited by scholarship students only (as they had given informed consent to be contacted by telephone interview) to ascertain if the home visit resulted in a change. 315 patient interviews were carried with 227 recalling and responding to the CTM items (see Table 4). The CTM scores improved for both repeat measures, reaching statistical significance.

Table 4: Care Transition Measures at the home visit and at follow up. (Follow up phone calls only made for patients visited as part of the scholarship arm)

Question (Scale of 1-4)	**Patients at time of home visit (n=960)**	**Patients, visited by scholarship students, who responded to phone interview**	**P value for repeated measures**
Hospital considered patients' preferences when deciding on treatment following discharge	3.4 ± 0.87	Not relevant	-
Did patient have all the information needed to look after self	3.25±0.91	3.2 ± 0.95 vs 3.71 ± 0.63 (n=227)	P<.001
On leaving hospital did patient understand each medication	3.28±0.93	3.26 ± 0.96 vs 3.69 ± 0.73 (n=199)	P<.001

3. Medication adherence

Adult patients (n=916) were taking on average 6.5±3.9 medications. In total, students identified 1013 medication discrepancies, involving 46% of the patients, with 2.4±1.8 discrepancies/patient when a discrepancy was found. Discrepancies were due to both system-level errors, such as unclear discharge instructions or conflicting information from different sources e.g. discharge letter and pill instructions, and to patient-level factors such as patient's decision to stop taking medication due to side effects or inadequate information.

4. Key stakeholder views

The Heads of Departments believed that the principal beneficiaries were patients from internal medicine and geriatric departments due to their common combination of loneliness, poverty, difficulties in purchasing medicines and health neglect. Some noted that students, due to transportation difficulties, did not always reach the patients who would benefit most. They described how linguistic simplification of the discharge letter, in conjunction with the home visit, had an impact on increasing compliance with medical instructions, and felt that patients' health was improved as

a result of taking medication more regularly, doing tests and making lifestyle changes as appropriate.

"Most patients do not understand the discharge letter; a home visit makes sure that the patient understands and there is also increased cooperation with the family doctor. The interpersonal connection allows students to engage emotionally, and makes the patient feel that someone cares for them - reduces fear, explains medication, and helps reduce re-admissions". (Head of internal medicine department)

Students' interviews and focus groups echoed these views. The value of the home visit for patients was a major theme, particularly in relation to organizing and educating patients about their medications and explaining their medical conditions. They described that spending time with patients and being attentive, meant patients gained in understanding and explanations in a way that could not be achieved in a busy Department. Patients described ETGAR as a helpful service, even those who had complied with students' visiting simply to help them complete their course requirements. They rated the service as 4.75±0.51 (mean±sd) on a scale of 1-5.

5. Readmission rates

Analysis of the objective measure of readmission rates for ETGAR patients compared with similar patients from the same departments is still underway. Very preliminary analysis for Ziv hospital shows that of the 81 adult patients visited on the required course, 7 (8.6%) were readmitted within 30 days. Current figures for re-admissions to Ziv hospital according to the Ministry of Health are 13.7% overall (excluding maternity) and 19% for internal medicine, suggesting that ETGAR may be having an impact on rates.

B. Assessment of the knowledge, attitudes and skills of students working in the ETGAR service

1. Attitudes and confidence

The impact on students' competence in working with patients in disadvantaged circumstances is shown in Table 5. The response rate at the start of the course was 87% but reduced to only 30% at the end. Given this major limitation, there does appear to have been a significant improvement in confidence and skills in handling an encounter and knowledge of Gailee populations' customs

Table 5: Change in students' self-perceived competence for the pilot year and required course 2015 – 2018

	At start of course n=192	At end of course n=66	p*
Confidence (scale 1-5)			
Going over medications	2.8±1.28	3.7±1.0	p<.001
Identifying problems in the discharge process	2.9±1.1	3.7±0.7	p<.001
Explaining the medical process to patients	3.2±1.1	3.7±0.9	p<.01
Cultural competence	3.2±1.0	3.6±0.8	p<.01
Total confidence score Confidence handling an encounter (Home visit) scale 1-5	2.96± 0.88	3.55± 0.66	p<.001
Skills acquired to take care of patients. (scale 1-7)	5.0±1.23	5.4±1.13	p<.05
Attitudes			
Patient-centeredness (scale 1-7)	3.75±0.45	3.76±0.5	NS
Knowledge			
Knowledge of Galilee citizen's customs (scale 1-5)	2.46±0.87	2.74±0.72	P<.05

*Unpaired t test

2. *Acquisition of written communication skills for patients with poor health literacy*

Students' first and last simplified discharge letters were analysed for their quality, blinded to time of writing, for the period October 2016 to July 2017(total n=85). Eleven could not be paired giving a total sample size of 74 letters written by 84 students. For analysis we used a six-item checklist covering three topics: the use of simple language (two items), information organization or "telling the narrative" (one item), and clarity and adherence to structure regarding medications and medical instructions at discharge (three items). All items were scored on a 1-5 scale according to a predefined rubric.

Table 6: Analysis of students' simplified discharge letters for quality in terms of use of simple language and clear medical terms, information organization and adherence to instructions regarding structure

	At start of course	**At end of course**	**P value***
Using simple language	3.6±0,89	4.1±0.77	P<.001
Telling the narrative (Information organization)	3.2±1.14	4.0±1.17	P<.001
Clear and structured medication guidance and medical instructions	3.8±0.87	4.2±0.66	P=0.056

*2-tailed paired t-test.

Students ability to write in plain language improved significantly over the course reaching a high standard by the end of the year. Telling the narrative in a clear and organized way was the most difficult aspect for students at the start, but scores improved to match the other components by the end of the year.

3. *Ability to identify social determinants impacting on patients' health*

Analysis of 177 students' home visits reports written by 105 students working in pairs during the academic year 2015-2016 and part of 2016-2017 demonstrated that students had acquired competence at identifying social determinants of health. Of the 15 themes identified in accordance with the biopsychosocial model, social support and patients' medical conditions were most prevalent, followed by personal/emotional related issues, with community-related issues least prevalent[iv]. Students clearly demonstrated understanding of the relationship between SDH and patient health and the challenges patients face in the community following discharge and acted to ameliorate these challenges. Women and mixed gender couples provided more elaborate reports, and also contained significantly more criticism of medical care. A fuller report has been submitted to a peer-reviewed journal[viii].

4. *Stakeholders' views*

The key stakeholders – heads of departments, the students themselves and patients commented on the educational benefits of the ETGAR program. Heads of Departments commented on the clinical aspects in terms of deepening understanding of various diseases, diagnosis, treatment, and supporting patients. They felt that the course contributed to developing effective and empathic communication with patients and the ability to see life from the patient's perspective. One expressed the view that students were now more aware that patients may 'fall into the abyss of lack of knowledge, caring, and alienation' for a number of reasons, and how the family doctor may not be available to meet the patient's needs after discharge. Department heads also saw that students gained an understanding of the relationship between the hospital and the community and acquired some abilities in assisting in the maintenance of a therapeutic continuum.

"Visiting patients at home allows an in-depth understanding of the treatment process…..The student assisted in stabilizing the patient and reducing recurrent hospitalizations. This process required in-

depth learning about liver transplantation to explain to the patient and also to guide him if he should return to hospital. The student learned how to collaborate with a patient …. the importance of taking the medication…….. It was a pleasant and exciting experience for the student." (Head of surgical department)

"In terms of skill and knowledge - when students explain to patients about the use of medication and make sure that they have purchased and use it properly, they must first learn about the illness …… they acquire important knowledge as well as the good feeling of helping the patient's health." (Head of paediatrics)

The students themselves perceived the gains they had made:

"I learned what a good and clear letter was and ……..understood the importance of having another person present at the time of discharge, as patients who were discharged alone did not understand all the information, …….. I learned important things and I acquired a significant set of tools." (25 year-old female student)

"I think entering people's homes after hospitalization gave me the possibility to understand better the sort of problems that can arise the moment patients are no longer in hospital." (29 year-old male student)

"The project opened me to a new world of medical care beyond medical treatment alone. …..Something I saw many times in the visit – patients who lost their will to invest in themselves, and perhaps I succeeded in giving them another small nudge of motivation." (28 year-old female student)

Patients at phone interview (n=315) affirmed the students' qualities. They rated their ability to listen and understand their situation highly (3.93+/- 0.27 on a scale of 1-4) and often commented on their empathy.

"*It helped, feeling someone caring and thinking about her, helping her with the pain, supporting her, helping to better understand her medical condition, explaining the discharge letter….." (Husband of patient)*

C. The implementation process

ETGAR was successfully implemented over the four years both in terms of numbers of patients visited and engagement of students in the program. This was facilitated by the service becoming a required course of study, and also by the Vatat scholarships for extending the work which remain in high demand.

Table 7 shows the profile of patients involved to date, showing that for the most part patients included in the program fulfilled the criteria of being vulnerable due to age, income, complexity and dependence. Of the 824 adult patients visited between

2016 and 2019, 691 (84%) had two or more of these attributes. There was, however, also a tendency by some students to choose less-challenging patients, and under-representation of Arab patients was evident. Qualitative data confirmed language and difficulties in accessing more remote locations as the cause.

Table 7: Profile of adult patients participating in the ETGAR service between 2015 and 2019 (data on 916 patients).

	Pilot year 2015-6	**2016-2017**	**2017-2018**	**2018-2019**	**TOTAL**
# adults age >60 years	62 (67%)	140 (70%)	236 (75%)	221 (71%)	659 (72%)
Living in rural area (%)	21%	33%	26%	28%	28%
Education <12 years (%)	46%	30%	28%	32%	32%
Income below average (%) *	39%	53%	46%	49%	48%
Complex condition (scoring 4--5 on scale of 5) **	33.7%	42.2%	42.8%	45.8%	42.8%
Lack of Hebrew competency (scoring 1-3 on scale of 5)	18.5%	10.6%	12.5%	13.8%	13.1%
Inadequate support at home (scoring 1-3 on scale of 5)	28.3%	22.1%	24.0%	23.7%	23.9%
Lacking independence (scoring 1-3 on scale of 5)	29.3%	41.7%	41.2%	40.1%	39.7%
Poor understanding of medication regime (scoring 1-3 on scale of 5)	29.3%	15.6%	26.8%	24.0%	23.7%

***** no answer for this item in 138 home visits

** students overall assessment taking into consideration chronic illness, number of medications, management, and needs socially/in the community

Implementation Barriers

The implementation process was challenging for a number of reasons:

- *Reaching the neediest of patients.* Most adult patients who participated fulfilled the criteria of need. However Arab patients were not proportionally represented, principally because language was perceived to be a barrier and few students had workable Arabic. There was also no budget for travel, so patients living in remote areas were hard to access.
- *Medical students' stress.* Medical students, like their peers elsewhere, are hugely stressed and examination-focused. There was extreme resistance

initially to ‘wasting time’ visiting patients at home, especially when patients lived remotely. This meant that some students tended to select ‘easy’ rather than disadvantaged patients just to fulfill course requirements.

- *Recruiting patients.* Students often found it a challenge to recruit patients to the service, particularly as the Helsinki process demanded signatures on a consent form written in complex language which not surprisingly engendered reticence and even suspicion on the part of some patients. Finding suitable patients In the pediatric and gynecology departments was particularly challenging.
- *Anxiety about home visits.* Most students (perhaps understandably) were anxious about making home visits alone and so we conceded to their working in pairs or threes. Fewer patients in total therefore benefited from ETGAR than originally intended.
- *Communication between clinical departments and the Medical Faculty.* The service was delivered across 24 departments in 4 hospitals, with inconsistency in the physicians responsible for student education through the year. The small ETGAR team is located at the Faculty in Zfat at a significant distance and the service experienced difficulties in establishing connection.
- *Burden of providing feedback.* The success of improving students’ competence in working with health illiterate patients carried the very heavy burden of marking students’ letters and reports and providing individual feedback.

Facilitators of the implementation process:

There were a number of facilitators that helped overcome the challenges encountered. The initial resistance from students when ETGAR was introduced as a compulsory course was reduced when the Dean and other senior members of the Faculty conveyed their belief that the ETGAR experience was an essential component of students’ professional development. Some of the students themselves (particularly those who received scholarships to work more extensively on the service) helped defray negativity. Some barriers, especially those based on anxiety and approaching patients reduced after the first home visit, when the

assignment appeared ‘doable’ and the benefit to patients more evident. There were also some champions among the nursing and medical staff who saw the value to patients and helped link students to patients in need. Lastly the conviction of the ETGAR team that the service was of value to both students and patients defrayed the demands of delivering the initiative.

Limitations of the study

The research inevitably had some limitations, some of which have been described in the section above. The original target of 1300 patients over two years was not realized, primarily due to students working in pairs or threes. Nonetheless the program did achieve 1010 home visits (90% of the 1119 patients who agreed to take part). Furthermore, the target of 150 students was surpassed with 334 ultimately participating, of whom 97 took on scholarships to see additional patients.

The evaluation framework was comprehensive. Data collection on patients was essentially complete (as providing the data was a course requirement); the response rate to questionnaires at baseline for students was also satisfactory (87%) but fell to 30% at course end, no doubt due to questionnaire fatigue which is prevalent among Israeli students. Any shortfall in students’ responses was compensated by the more objective (and essentially complete) measure of analyzing students’ course work.

Some of the tools used were not validated, although the CTM3 measure and the Medication Discrepancy Tool (which are validated in Israel) provided some objective evidence for the benefit of the home visits. Evidence from quantitative tools were confirmed and enriched by the results of the qualitative investigation with hospital staff, students and patients.

Lastly, we had intended to recruit a control group of students, but that became impossible when the ETGAR course was made a requirement for all students in Safed. it was also our intention to conduct subgroup analysis by ethnicity, however given the lower representation of patients from Arab backgrounds we were unable to do so meaningfully.

DISCUSSION AND CONCLUSIONS

The National Health Insurance Law, 5754-1994, created universal coverage for patients, but despite its implementation in 1994, health gaps continue to expand. This problem is not confined to Israel alone, and there is an international incentive to investigate how health disparities can be reduced. The ETGAR service was designed as a way to address this issue through its aim of ensuring future doctors are competent at working with disadvantaged patients, while providing a service for local patients who were deemed by hospital staff to be in need.

We believe that the ETGAR service was successful. Over the course of four years over 1000 patients were visited at home. A good proportion (although not all) met our criterion of need. Analysis showed that students acted to ameliorate their situation, and by patients' own accounts made a difference to their transition back home from hospital. Students gained from the experience (despite a not inconsiderable antipathy to the course by some). On objective analysis their sensitivity to the social determinants of health increased and their skills in written plain language communication improved. Reassuringly senior hospital staff also saw the benefits, despite the challenges of communication between hospital staff and a remote Faculty of Medicine.

The results of this study have already been met with interest by medical educators worldwide[i-vii]. While there are a number of programs in medical schools reported from around the world, they are usually short-term (only a few hours)[32,34] and do not offer patients a service. Our early results have already been presented in conferences internationally[iii,vi] and have resulted in a publication in the Journal of General Internal[27] Medicine and a letter in the prestigious Lancet[27].

ETGAR may arouse some interest as a model for addressing health literacy and health disparities utilizing a vulnerable point in patients' medical journeys, namely hospital discharge. It provides insights into inadequacies in the health system and provides some practical recommendations for coping with health inequalities in the Galilee region, which is characterized by low socio-economic levels. This research has addressed the principle of equality on which the National Health Insurance Law is based and proffers recommendations for provision of services. As Israel is not

alone in its need to find solutions to health inequities, ETGAR may provide a model for other health systems too.

POLICY IMPLICATIONS AND RECOMMENDATIONS

1. ETGAR is a model of how the Social Determinants of Health, health illiteracy and cultural competence can be taught. It could be introduced into medical curricula more widely, and adapted for training other health professionals such as nursing and pharmacy students
2. The Israeli Ministry of Health has already approached the ETGAR team as it is exploring the problem of health literacy and the pressing need for simplified written information for patients at the point of discharge. The ETGAR team has taken the responsibility of drawing up a template on how to ensure that medical instructions could be communicated through writing in plain language
3. The idea of extending ETGAR is being examined through the concept of developing an ETGAR outpatient clinic in Poriah hospital where patients would be able to receive education and guidance following discharge.

ETGAR PUBLICATIONS AND PRESENTATIONS TO DATE

i. Spitzer-Shohat S, Sagi D, Schuster M, Ben-Ami M, Rivo M, Tur-Kaspa R, Rudolf MCJ. Teaching the interplay between Social Determinants of Health (SDH) and Health Outcomes: The ETGAR student-delivered service. J Gen Intern Med. 2019 Mar 11. doi: 10.1007/s11606-019-04904-z.

ii. Rivo M, Rudolf MCJ, Spitzer-Shohat S,Weingarten M, Schuster B, Schwartz R, Nash D, Silberberg N. Bar Ilan Medical School's ETGAR Program. Lancet Feb 2018

iii. Sagi D, Spitzer-Shohat S, Schuster M, Rudolf MCJ (August 2017). Training Students to Tackle Health Inequalities. Evaluation of a Novel Student Delivered Service that Bridges Transition Between Care Settings. International Association for Medication Education (AMEE). Helsinki, Finland.

iv. Sagi D, Spitzer-Shohat S, Ben-Ami M, Schuster M, Rudolf MCJ (May 2017). ETGAR – An Educational Program for Teaching the Social Determinants of Health Through a Student Delivered Service. The 13th Annual Health Policy Conference. The Israel National Institute for Health Policy Research. Tel-Aviv.

v. Spitzer-Shohat S, Sagi D, Schuster M, Rudolf MCJ. (February 2016). ETGAR: A Medical School's Innovative Program for Training Students to Tackle Transition between Care Settings. HEALER. Faculty of Medicine Jerusalem

vi. Spitzer-Shohat S, Sagi D, Schuster M, Rudolf MCJ. (May 2016). ETGAR: A medical school's partnership with hospitals across the Galilee to innovatively tackle transition between care settings. The 6th International Jerusalem Conference on Health Policy.

vii. Sagi D, Spitzer-Shohat S, Schuster M, Rier DA, Rudolf MCJ. Learning social determinants of health through a home visiting course in the clinical years (submitted to peer-reviewed journal)

REFERENCES

1. Marmot Michael. Fair Society Healthy Lives. In: Eyal, Nir, Hurst Samia A., Norheim, Ole F. , Wikler D, ed. *Inequalities in Health: Concepts, Measures, and Ethics*. Oxford University Press; 2013. https://books.google.com/books?hl=iw&lr=&id=7B5pAgAAQBAJ&pgis=1. Accessed March 15, 2016.
2. Marmot Michael. *Social Determinants of Health- What Doctors Can Do*.; 2011. http://www.bma.org.uk/-/media/files/pdfs/working for change/improving health/socialdeterminantshealth.pdf.
3. Awosogba T, Betancourt JR, Conyers FG, et al. Prioritizing health disparities in medical education to improve care. *Ann N Y Acad Sci*. 2013;1287:17-30. doi:10.1111/nyas.12117
4. Rudolf MCJ, Reis S, Gibbs TJ, et al. How can medical schools contribute to bringing about health equity? *Isr J Health Policy Res*. 2014;3(1). doi:10.1186/2045-4015-3-17
5. Swain GR, Grande KM, Hood CM, Inzeo PT. Health care professionals: opportunities to address social determinants of health. *WMJ*. 2014;113(6):218-222. http://www.ncbi.nlm.nih.gov/pubmed/25745694. Accessed March 23, 2016.
6. National Academies of Sciences, Engineering, and Medicine.Social Determinants of Health I of M. *A Framework for Educating Health Professionals to Address the Social Determinants of Health : Health and Medicine Division*.; 2016. http://www.nationalacademies.org/hmd/reports/2016/Framework-for-Educating-Health-Professionals-to-Address-the-Social-Determinants-of-Health. Accessed March 29, 2016.
7. Institute of Medicine. A Framework for Educating Health Professionals to Address the Social Determinants of Health. 2016. doi:10.17226/21923
8. Essa-Hadad J, Murdoch-Eaton D, Rudolf MCJ. What impact does community service learning have on medical students' appreciation of population health? *Public Health*. 2015;129(11):1444-1451. doi:10.1016/j.puhe.2015.05.009
9. Wear D, Kuczewski MG. Perspective: medical students' perceptions of the poor: what impact can medical education have? *Acad Med*. 2008;83(7):639-645. doi:10.1097/ACM.0b013e3181782d67
10. Shore WB, Muller J, Thom D, Mergendoller J, Saba GW. Analysis of clerkship student-patient interviews in underserved clinics. *Fam Med*. 44(7):508-513. http://www.ncbi.nlm.nih.gov/pubmed/22791537. Accessed March 24, 2016.
11. Riddle M, Lin J, Steinman J, et al. Incorporating the principles of the patient- centered medical home into a student-run free clinic. *Adv Med Educ Pract*. September 2014:289. doi:10.2147/AMEP.S66762
12. Schutte T, Tichelaar J, Dekker RS, van Agtmael MA, de Vries TPGM, Richir MC. Learning in student-run clinics: a systematic review. *Med Educ*. 2015;49(3):249-263. doi:10.1111/medu.12625
13. Pammett R, Landry E, Weidmann AE, Jorgenson D. Interprofessional student-run primary health care clinics: Educational experiences for pharmacy students. *Can Pharm J / Rev des Pharm du Canada*. 2015;148(3):125-128. doi:10.1177/1715163515578123
14. Simpson SA, Long JA. Medical student-run health clinics: important contributors to patient care and medical education. *J Gen Intern Med*. 2007;22(3):352-356. doi:10.1007/s11606-006-0073-4
15. Taylor MA, Hollett YR, Anderson JP, Schwenk TL. Educational Value of a Free Medical Clinic Operated by Medical Students. *Fam Med*. 2016;48(2):127-131. http://www.ncbi.nlm.nih.gov/pubmed/26950784. Accessed March 24, 2016.
16. Smith S, Thomas R, Cruz M, Griggs R, Moscato B, Ferrara A. Presence and Characteristics of Student-Run Free Clinics in Medical Schools. *JAMA*. 2014;312(22):2407. doi:10.1001/jama.2014.16066
17. Holmqvist M, Courtney C, Meili R, Dick A. Student-Run Clinics: Opportunities for Interprofessional Education and Increasing Social Accountability. *J Res Interprof Pract Educ*. 2012;2(3).
18. Buckley E, Vu T, Remedios L. The REACH project: Implementing interprofessional practice at Australia′s first student-led clinic. *Educ Heal*. 2014;27(1):93. doi:10.4103/1357-6283.134360
19. Bailey SC, Fang G, Annis IE, O'Conor R, Paasche-Orlow MK, Wolf MS. Health literacy and 30-day hospital readmission after acute myocardial infarction. *BMJ Open*. 2015;5(6):e006975-e006975. doi:10.1136/bmjopen-2014-006975

20. Cawthon C, Walia S, Osborn CY, Niesner KJ, Schnipper JL, Kripalani S. Improving Care Transitions: The Patient Perspective. *J Health Commun*. 2012;17(sup3):312-324. doi:10.1080/10810730.2012.712619
21. Lindquist LA, Go L, Fleisher J, Jain N, Friesema E, Baker DW. Relationship of Health Literacy to Intentional and Unintentional Non-Adherence of Hospital Discharge Medications. *J Gen Intern Med*. 2012;27(2):173-178. doi:10.1007/s11606-011-1886-3
22. Leppin AL, Gionfriddo MR, Kessler M, et al. Preventing 30-Day Hospital Readmissions. *JAMA Intern Med*. 2014;174(7):1095. doi:10.1001/jamainternmed.2014.1608
23. Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. *J Am Geriatr Soc*. 2003;51(4):549-555. http://www.ncbi.nlm.nih.gov/pubmed/12657078. Accessed March 28, 2016.
24. Kangovi S, Barg FK, Carter T, et al. Challenges faced by patients with low socioeconomic status during the post-hospital transition. *J Gen Intern Med*. 2014;29(2):283-289. doi:10.1007/s11606-013-2571-5
25. Englander H, Michaels L, Chan B, Kansagara D. The care transitions innovation (C-TraIn) for socioeconomically disadvantaged adults: results of a cluster randomized controlled trial. *J Gen Intern Med*. 2014;29(11):1460-1467. doi:10.1007/s11606-014-2903-0
26. Rivo M, Rudolf M, Spitzer-Shohat S, et al. Reducing health disparities: Bar Ilan Medical School's care transition service. *Lancet*. 2018;391(10120). doi:10.1016/S0140-6736(17)32178-5
27. Spitzer-shohat S, Sagi D, Schuster M, et al. Teaching the interplay between Social Determinants of Health (SDH) and Health Outcomes: The ETGAR student-delivered service. *J Gen Intern Med*. 2019.
28. Avni S, Averbuch E. *Health Inequity*.; 2016.
29. Coleman EA, Smith JD, Frank JC, Eilertsen TB, Thiare JN, Kramer AM. Development and testing of a measure designed to assess the quality of care transitions. *Int J Integr Care*. 2002;2:e02. http://www.ncbi.nlm.nih.gov/pubmed/16896392. Accessed March 28, 2016.
30. C t m ® (ctm-3). 2006:2006.
31. Smith JD, Coleman EA, Min S-J. A new tool for identifying discrepancies in postacute medications for community-dwelling older adults. *Am J Geriatr Pharmacother*. 2004;2(2):141-147.
32. Bray-Hall S, Schmidt K, Aagaard E. Toward safe hospital discharge: a transitions in care curriculum for medical students. *J Gen Intern Med*. 2010;25(8):878-881. doi:10.1007/s11606-010-1364-3
33. Smith RC, Fortin AH, Dwamena F, Frankel RM. An evidence-based patient-centered method makes the biopsychosocial model scientific. *Patient Educ Couns*. 2013;91(3):265-270. doi:10.1016/J.PEC.2012.12.010
34. McBryde, Meagan; Vandiver J.W.; Onysko M. Transition of Care in Medical Education: A Compilation of Effective Teaching Methods. *Fam Med*. 2016;48(4):265-272.