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Knowledge transfer and exchange among academic researchers of Hawler Medical University

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Abstract

Background and objectives: Knowledge transfer and exchange is a dynamic and complex process which comprises the creation of knowledge and its application to improve health, provide more effective health services and products, and will strengthen the overall healthcare system. This study aimed to understand the current context of knowledge transfer and exchange and identify the main barriers and facilitators for enhancing that from the perspective of university academics.

Methods: This cross-sectional survey was carried out between February to September 2015 on 160 academic researchers of the four colleges of Hawler Medical University; Medicine, Dentistry, Pharmacy, and Nursing. A self-administered questionnaire was used for this purpose. Likert scale was used to rate participants answers and SPSS for assessing the level of association between different variables.

Results: The study revealed that the mean ± standard deviation time academic researchers used for conducting different activities of knowledge transfer and exchange was 9.39 ± 14.08 and that around 43% of the participants stated that they use less than 5% of their time for knowledge transfer and exchange activities. There was no significant statistical association between knowledge transfer and exchange percentage time used by academic researchers from one side and research areas and different colleges from another side.

Conclusion: There is an obvious shortfall from the side of academic researchers in transferring or exchanging the knowledge they acquire from their health research to their target audience. There is a lack of investment from the side of academic researchers in health policy and system research.

Keywords: Knowledge transfer; Exchange; Hawler Medical University; Erbil.

Introduction

Knowledge Transfer and Exchange (KTE) is defined as an interactive interchange of knowledge between research users and research producers.[1] It is a dynamic and complex process which comprises the creation of knowledge and its application to improve health, provide more effective health services and products, and will strengthen the overall healthcare system. Increasing the likelihood that research evidence will be used in policy and practice decisions and enabling researchers to identify practice and policy-relevant research questions, are the main purposes of KTE.[2] This process takes place within a complex system of interactions between researchers and knowledge users which may vary in intensity, complexity, and level of engagement depending on the nature of the research and the findings as well as the needs of the particular knowledge user.[3] Because of the general culture of accountability and the growing demands on health care resources, a greater emphasis is being placed on generating knowledge that can have a practical impact on the health system.[4] Strategies of KTE are emerging as potential solutions to commonly encountered barriers to using evidence that is more capable of accommodating the particular challenges

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of healthcare systems. Three sub-groups were identified as contributing to the efficacy of methods for sharing or transferring research knowledge to healthcare personnel and determining the value of KTE initiatives; relevance of research information, accessibility of research evidence to potential users and the format in which knowledge is presented and the methods used to share it with health professionals.[5] As for the majority of developing countries and those countries in post-conflict status, Iraq including Kurdistan Region has witnessed a poor role of knowledge transfer and exchange between researcher producers and research users, and hence a poor utilization of health research in health policy development and planning. The reasons for such a poor role, whether from the policymakers' side or the researchers' side, are not clearly understood. The study aimed to understand the current context of knowledge transfer and exchange and identify the main barriers and facilitators for enhancing that from the perspective of university academics. The specific objectives of this study included assessment of the level of KTE from the academic researchers' side, assessment of the association between the level of KTE and other variables like different colleges, main research areas, and participants' gender, and finally identification of the main facilitators and barriers in front of conducting KTE activities.

Methods

This cross-sectional study was carried out in Hawler Medical University's colleges of Medicine, Dentistry, Pharmacy, and Nursing, during the period, February to September 2015. A sample size of 160 academic researchers was calculated based on having a ±6 absolute precision around the most extreme rate of 50% having published research related to health policy with a 95% confidence interval. This sample was randomly selected using systematic random sampling method among the university academics based the updated staff list from Hawler Medical University. A closed self-administered questionnaire was used for data collection, and this was modified from WHO questionnaire on Knowledge Transfer and Exchange in the Health Sector-Researcher Version[6]. The questionnaire also included a set of explanation boxes to clarify how the participants should complete it. This questionnaire was in the English language and included a variety of questions. The study participants were asked to answer these questions using different rating systems including Likert ratings such as never, rarely, occasionally, frequently and always or strongly disagree, disagree, neither agree nor disagree, agree and strongly agree. These questions covered different domains such as how often the academic researchers conduct different sorts of knowledge transfer and exchange activities with different target audiences and what encourages or discourages them in conducting these activities. The statistical package for the social sciences (version 19) was mainly used for data analysis. Pearson Chi-square and Fisher's Exact test were mainly used to find the association between different variables. A P value ≤0.05 was considered to be statistically significant. The study was approved by the Research Ethics Committee of the College of Medicine of Hawler Medical University. Informed consent of study participants was obtained, and their anonymity was preserved.

Results

Of 160 questionnaires distributed to the academic researchers (84 male and 76 female) of the four colleges of Hawler Medical University, only 136 (85%) questionnaires were returned. Of those returned, 70 (51.5%) were completed. A total of 66 (48.5%) participants returned back the questionnaires explaining that although they have done research on health topics, they haven't undertaken one or more activities in the hope that research

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on the health topic will be considered and/or acted upon outside the scholarly community, i.e., by individuals other than researchers such as policymakers, health managers, and clinicians.

Research Area

Concerning the main research area, 56% of the participants have considered the clinical research as their main research area, followed by biomedical (20%), population and public health (18%), and health policy and system (6%) as shown in Figure 1.

Knowledge Transfer and Exchange

Regarding the percentage of the time, out of their total working time, the academic researchers had spent on knowledge transfer and exchange activities with their relevant target audiences, the mean ± standard deviation was 9.39 ± 14.08, with a mode of 10.0. The minimum percentage recorded was 0%, and the maximum was 70%. The results showed that around 43% of the participants stated that they use less than 5% of their time for knowledge transfer and exchange activities, and only around 18% of them used 15% and more of their time for this purpose (Figure 2).

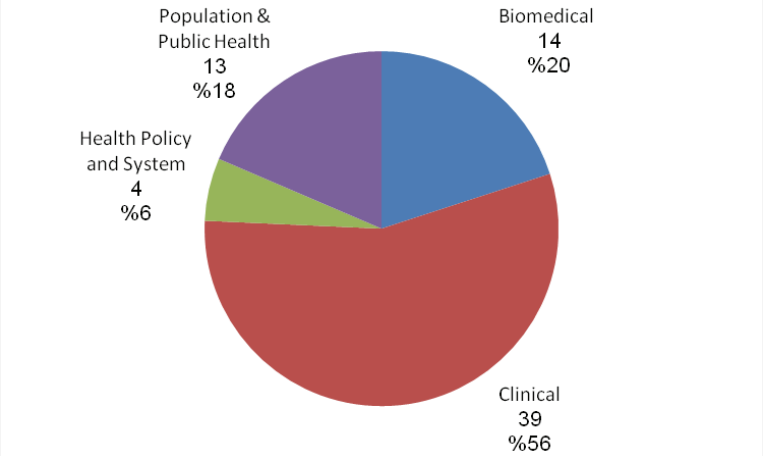

Figure 1: The main research areas of the academic participants.

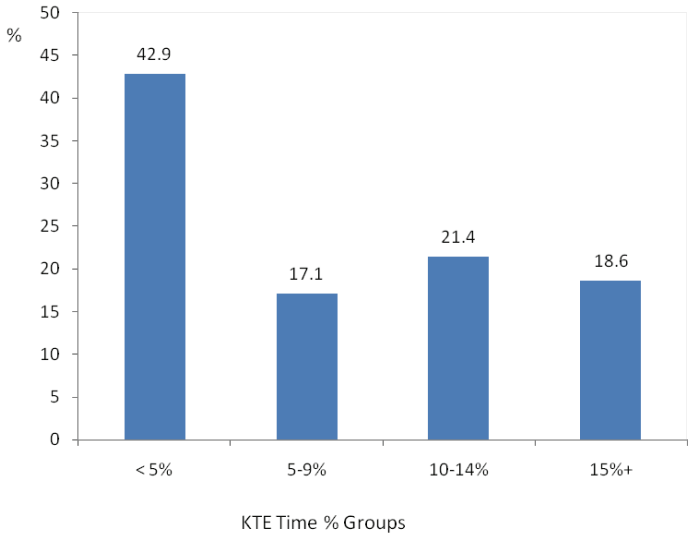

Figure 2: Percentage of academic participants' time used for knowledge transfer and exchange

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Although statistically not significant, 40% of the researchers who work for the College of Medicine, 75% of those work for the College of Dentistry, 10% of those work for the College of Pharmacy, and more than 46% of those work for the College of Nursing have used less than 5% of their time for KTE activities. It is also apparent that 70% of those work for the College of Pharmacy use 5-14% of their time in knowledge transfer and activities (Table 1). Although statistically not significant, 35.7% of those who identified biomedical research have spent less than 5% of their time on KTE activities compared to 51.3% of clinical research, 25% of health policy and system research and 30.8% of those who identified population and public health as their main research area (Table 2).

Table 1: Knowledge transfer and exchange time percentage groups distribution on participants from Hawler Medical University colleges.

College	Knowledge transfer and exchangetime % groups No. (%)				Total	*P* value
	< 5%	5-9%	10-14%	≥ 15%		
Medicine	14 (40)	6 (17.1)	7 (20)	8 (22.9)	35 (100)	0.052
Dentistry	9 (75)	2 (16.7)	1 (8.3)	0 (0)	12 (100)	
Pharmacy	1 (10)	4 (40)	3 (30)	2 (20)	10 (100)	
Nursing	6 (46.2)	0 (0)	4 (30.8)	3 (23)	13 (100)	
Total	30 (42.9)	12 (17.1)	15 (21.4)	13 (18.6)	70 (100)	

Table 2: KTE time percentage distribution by the main research areas.

Research Area	Knowledge transfer and exchange time % groups No. (%)				Total	*P* value
	< 5%	5-9%	10-14%	≥15%		
Biomedical	5 (35.7)	3 (21.4)	2 (14.3)	4 (28.6)	14 (100)	0.136
Clinical	20 (51.3)	7 (17.9)	7 (17.9)	5 (12.9)	39 (100)	
Health Policy &System	1 (25)	2 (50)	0 (0)	1 (25)	4 (100)	
Population & Public Health	4 (30.8)	0 (0)	6 (46.2)	3 (23)	13 (100)	
Total	30 (42.9)	12 (17.1)	15 (21.4)	13 (18.6)	70 (100)	

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About three-quarters of the respondents stated that they never or very rarely undertaking KTE activities to the general public and civil society groups, more than 60% never or rarely communicate with patients and their families, and managers in health-care institutions, and more than 90% never or rarely deal with managers in donor agencies and international organisations (Figure 3). With regard to some barriers to and facilitators of KTE during involvement in research and KTE activities, only 44% of the academic researchers agree on that KTE activities could be paid for through research grants, 30% think that there are existing structures and processes to link researchers and target audiences, and just less than 40% think that target audiences lack the expertise for translating research into action (Figure 4).

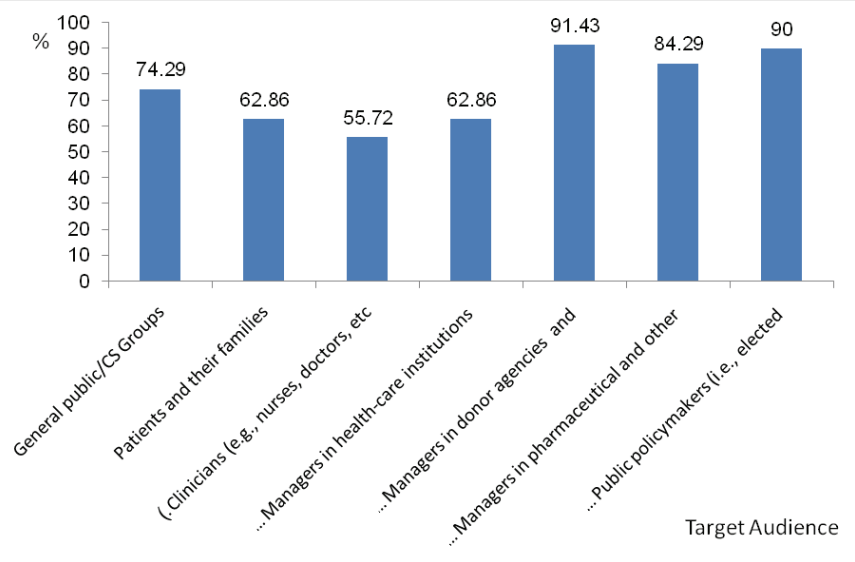

Figure 3: Frequency of knowledge transfer and exchange activities that never/rarely conducted with different categories of potential users.

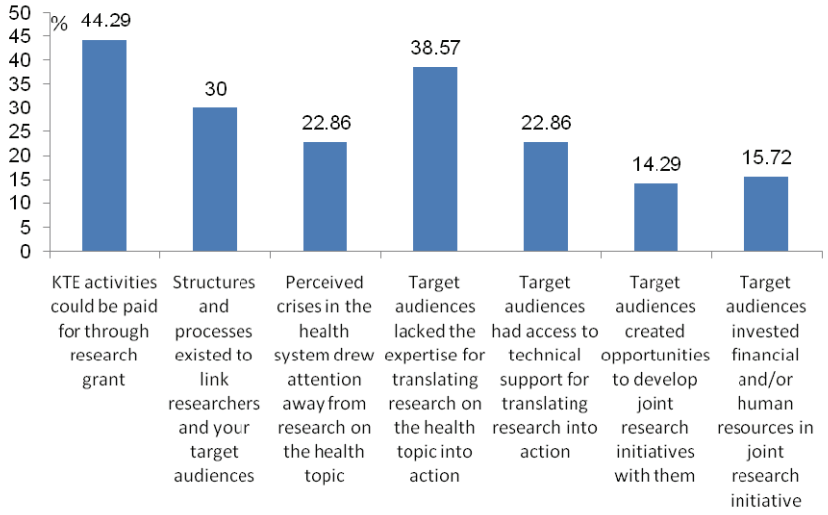

Figure 4: Degree of agreement of academic staff concerning barriers to and facilitators of knowledge transfer and exchange.

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Discussion

In its recent strategy for research for health, WHO EMRO has emphasized the knowledge transfer and exchange. To ensure that the quality evidence is being translated into health policy, WHO EMRO's strategic actions included access to unpublished scientific literature in the region, publishing research results in an accessible and simplified way, promoting the importance of scientific research and knowledge exchange and strengthening the evidence-based policy networks in the region.[7] The study revealed that just above half of the academic researchers who participated in this study had not undertaken any activities in the hope that the research they have done on a particular health topic will be considered and/or acted upon outside the scholarly community. This result agrees with those of the study conducted in Eastern Mediterranean countries which revealed that more than one-half of the researchers contacted, did not conduct any of the KTE activities related to the production and dissemination of research like contact and exchange with policymakers and stakeholders.[8] The mean ± SD of the percentage of the time, out of their total working time, academic researchers had spent on performing different KTE activities with different target audiences was 9.39±14.08%. This figure is less than what was reported in a study conducted in 2010 in a number of low and middle-income countries which revealed that the mean ± SD of the researchers' percentage of time used for KTE activities is 25±19%.[9] The current study also revealed that around 43% of the researchers spent less than 5% of their time in performing any KTE activities. This is in addition to more than 48% of the participants who already returned the questionnaire without the completion since they have not considered any KTE activities. This highlights the poor status of the scholarly community in relation to the importance of the KTE in their academic work. Although not statistically significant, the study results revealed that the highest proportion of researchers who spent minimum percentage of their time on their KTE activities were among the College of Dentistry, followed by the College of Nursing, College of Medicine and College of Pharmacy, and there was no statistically significant difference between males and females in this regard. Results showed that 56% of the researchers who completed the questionnaire considered clinical research as their main research area, followed by biomedical research (20%), population and public health (18%), and lastly health policy and system research (6%). While results from the study conducted by Lavis *et al* in 2010[9] were clinical research (35%), population and public health (30%), health policy and system research (20%), biomedical research (12%), and other fields (2%). These results reflect the low investment in both population and public health and health policy and system research by Hawler Medical University researchers. Only around 12% of the respondents with clinical research have stated that they spend more than 15% of their time on doing KTE activities which are the least among researchers from other research areas. This indicates the relatively low percentage of time which is given by the academic clinicians on performing KTE activities and it can be justified by the lack of time the clinicians have to conduct these activities since they are busy with their routine day-to-day work such as their private clinic work in addition to their work at hospitals and university. This study showed that around 74% of the researchers have never or rarely undertaken KTE activities related to their health topic research with general public and civil society groups, compared to around 63% of patients and their families, around 55% with clinicians like doctors and nurses. These figures are quite different compared with the Lavis *et al*. (2010)[9] study which revealed that 61% have frequently or always conducted KTE activities with general public and civil

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society groups compared to 61% with patients and their families, 69% with clinicians, e.g. nurses and doctors. This study revealed that around 44% of the researchers agree or strongly agree on the fact that KTE activities could be paid for through research grants which they were eligible to apply, 30% on that structures and processes existed to link researchers and their target audiences, around 23% on that perceived crises in the health system drew attention away from research on the health topic, around 38% on that target audiences lacked the expertise for translating research into action, around 23% on that target audiences had access to technical support for translating research into action, around 14% on that target audiences created opportunities to develop joint research initiatives with them, around 16% on that target audiences invested financial and human resources in joint research initiatives, and around 21% on that target audiences created events for knowledge transfer and exchange. Compared to the Lavis *et al*. (2010) study,[9] 44% of researchers agreed or strongly agreed on that KTE activities could be paid for through research grants for which they were eligible to apply, 53% on that structures and processes existed to link researchers and target audiences, 30% on that crises in the health system drew attention away from research on the health topic, 37% on that target audiences lacked the expertise for translating research on the health topic into action, 47% on that target audiences had access to technical support for translating research into action, 47% on that target audiences created opportunities to develop joint research initiatives with them, 29% on that target audiences invested financial and human resources in joint research initiatives, and 45% on that target audiences created events for KTE. The Eastern Mediterranean study also revealed that 68% of the researchers thought that funding for KTE activities should be part of the research process, 66% of the researchers agreed or strongly agreed that the use of evidence from the health policy and service research was hindered by practical constraints of implementation such as financial implications, 65% of the researchers agreed that there is lack of coordination between policymakers and researchers hindered the use of evidence from the health policy and services research in health policy-making process, 68% of them agreed that the use of such evidence in policy was hindered by insufficient policy dialogue opportunities, networking and collaboration between researchers and policymakers and stakeholders, 31% of the researchers agreed or strongly agreed that policymakers and stakeholders have the required expertise for acquiring, assessing quality and local applicability of health policy and services research, and applying it in health policy-making, and that only 20% of the researchers agreed or strongly agreed that policymakers and stakeholders provide adequate funding for priority research. These results reflect the financial concern of the researchers in conducting any KTE activities and the need for covering the cost of these activities within research grants. They also highlight the need for putting structures and establishing processes to help in conducting different KTE activities between researchers from one side and their target audiences from another side. The results also reflect the need for initiating a capacity building program to develop target audiences' skills concerning translating research into action. Health policymakers also need to get closer to the researchers and allocate adequate human and financial resources for joint research initiatives.

Conclusion

There is an obvious shortfall from the side of academic researchers in transferring or exchanging the knowledge they acquire from their health research to their target audiences. Academic researchers have not invested in building their knowledge and capacity in KTE. They rarely considered

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their target audiences capacity building to assess the quality and applicability of research. There is a lack of investment from the side of academic researchers in health policy and system research. This will have its impact on the process of health system reform. Universities need to have special policies and guidelines on KTE. There needs to be a clear investment from the side of universities in introducing the concept of KTE through organizing workshops to improve the knowledge of academic researchers on this matter and the way it can be performed. Universities need to allocate technical and financial resources, for conducting KTE activities by their academics. A reward or recognition system needs to be considered for academic researchers who perform exceptional KTE activities and produce good pieces of research that are considered by the local/regional policymakers in their policymaking activities. Academic researchers need to familiarize themselves with concepts and methods of KTE through literature searching and participating in capacity building workshops and training courses in this regard. Further researches, tackling different aspects of this study, need to be conducted in the future for a more detailed analysis of the studied issues.

Competing interests

The authors declare no competing interests.

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