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Enrollment, Adherence and Retention Rates Among Musculoskeletal Disorders Rehabilitation Practitioners in Knowledge Translation Studies: a Systematic Review and Meta-regression

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Dina Gaid: Good afternoon, everyone. My name is Dina Gaid. I'm a postdoc fellow at the School of Rehabilitation at Saskatchewan University. I'm a middle age colored woman wearing blue shirt with orange scarf with short light, brown hair, brown eyes with eyeglasses, with virtual background of bookshelves. So today I will present a systematic review with a meta-regression on enrollment, adherence and retention rates among musculoskeletal disorder rehabilitation practitioners in no translation studies. Next slide please. So musculoskeletal disorders are one of the most common health conditions worldwide and are costly to healthcare systems. Musculoskeletal conditions are associated with a high economic burden globally, estimated at $37 billion in 2010. Rehabilitation practitioners such physiotherapist, occupational therapist, chiropractors deliver care to over 11 million Canadians with musculoskeletal conditions with estimated increase to 15 million patients by 2023. Substantial research practice gap among rehabilitation clinicians persist despite availability of clinical practice guideline to inform the practice in rehabilitation.

Knowledge translation aims to promote the use of research evidence in healthcare systems targeting multiple levels of outcomes, whether professional, patients, or organizational outcomes. Next, please. Low enrollment adherence and retention rate are major factors that can contribute to the success or failure of KT intervention and also influence the estimation of effectiveness of any intervention. So, assessing those rates may help researchers to develop more appealing KT interventions that practitioners can easily accept and sustain into their practice. And also can improve the design of future trial and consequently increase their availability and validity and disability. Yet enrollment adherence retention rates have not been described in KT studies. Next, please.

So, this systematic review aimed to estimate the enrollment adherence and retention rates of KT interventions. Third, rehabilitation practitioners in charge of patients with musculoskeletal disorders, and also to identify the factors that likely affect those rates. Next, please. So, a search strategy was developed in a collaboration with health science librarian to ensure that we capture the maximum number of this study in rehabilitation

science. The surgery strategy included subject heading, MeSH terms, keywords and synonyms for musculoskeletal disorders, knowledge translation, and rehabilitation. We searched and published literature in scientific journals in five databases: OVID MEDLINE, EMBASE, PsycINFO, CINAHL, and Cochrane databases in English language. We searched those databases from inception to October 2020. Three vendor reviewers screened the title and abstract of identified records by applying the eligibility criteria. And the same reviewers then independently assessed the full text of potential eligible study. Next, please.

We followed PICO format to set the eligibility criteria. For participants, we included all types of rehabilitation practitioners, including physiotherapists, occupational therapists, osteopaths and chiropractors, managing patient with musculoskeletal conditions. For interventions, we include KT interventions selected based in ERIC classification, which provide a comprehensive catalog of KT intervention that can be used in implementation, research and practice. For outcomes, we targeted the three visibility measures. Enrollment rates defined as the proportion of participants who accept to participate in the study, over all eligible participants invited to the study. An adherence rate divided as the proportion of participants who completed the intervention over all participants who assigned to the intervention group. And also by retention rate, defined as the proportion of participants who completed the intervention through the first follow-up point over the participants who started the study in each group, whether intervention or control group. For the study design, as recommended by EPOC systematic reviews, we included randomized control trials, cluster randomized control trials, non-randomized control trials, and before and after study.

Next please. For that extraction we extracted data related to study characteristics like year publication, country, study design, study duration, number of study groups, number of follow-up points, and number of outcomes. And also, we extracted data related to the KT intervention themselves, like the type of KT intervention, number and duration of KT interventions in each study, mode of delivery, and the identity of the intervention. For practitioners, we extracted data related to practitioner age, profession, type of musculoskeletal disorder they manage, and also number of practitioners approached who were ineligible for the study who refused to participate, and to each assigned group, and practitioners who adhered to the KT intervention, and who participated to the first follow-up points, and the reason for refusal. Next, please.

For the data analysis, descriptive analysis was conducted to describe each variable that could possibly affect the visibility rate, as proportions. And meta-regression weighted by the sample size was used to estimate the overall enrollment adherence and retention rate: enrollment - calculated for all participants, retention - calculated for intervention groups and control groups separately, and adherence - calculated for intervention group only. The meta-regression model was used to assess the correlation between the potential variables and the visibility rates. Next, please.

The strategy yielded 6,088 records after removing publications. Sorry, after removing the applications screening for title abstract identified 105 potential eligible articles, of which those three studies met our inclusion criteria. Next, please. For participating practitioners, most of the study targeted PT physiotherapists with around 70%, while

the remaining studies targeting mixed type practitioners with 13%, chiropractors 12%, occupational therapy 3%, and osteopathy 3% only. While for the type of musculoskeletal disorder, the common type was back pain by 45%, followed by general musculoskeletal disorder 27%, and then neck pain 18%, osteoarthritis 6%, and rheumatoid arthritis by 3% only. The prominent types of KT interventions were educational meetings by 97%, followed by distribution of education material by 58%. Then audit and feedback by 30%, local opinion leader 24%, reminder 21% facilitation, 15 educational outreach visits by 12%, ongoing consultation only 12%, and centralized technical assistant 12%, while the other or the rest of types of KT intervention was really less common than that. Next, please.

So, for calculating the rates, we find that the overall enrollment rate was 82%, ranging from 32% to 111 studies. Next please. While for the adherence rate, we calculated the adherence rate for educational meeting intervention only. However, the calculated adherence rate can be well exemplified the adherence rate for the other associated intervention in each study. As educational meeting were mostly delivered concurrently with the other intervention, such as distribution of education materials, opinion leaders, facilitation and RNA feedback. And we found that the overall adherence rate was 74%, 73 for before and after study, and 78 for controlled trials. Next, please.

While for retention rate, we find the retention rate was 65%, 49% for before and after study, and 81% for controlled trials. And four controlled trials, 84% intervention groups and 81% for control groups. Next please. And here for the factor affecting each of those feasibility rates, we find that for enrollment rate, the study related factor enrollment rate can be increased by 12%. If we have a study have more than one study group and increased by 11% for the study, you have more than one follow-up points. Why it decreased by 12% for before and after study compared to control trials. Why? For the practitioner related factor, we find that the enrollment rate increased by 33% for enrollment practitioners who manage back pain, while it's increased by 19% when we enroll practitioner managing neck pain. And for KT intervention related factor, we find that enrollment rate increased by 16% for KT intervention that delivered virtually or online intervention, and increased by 19% for educational meeting, which lasted more than four hours, and also increased by 29% for educational meeting when it's provided more than one time, while it decreased by 38% when we deliver between two and three interventions, and it decreased by 16% when we deliver more than three intervention together. Next, please.

While for the adherence rate, we find that the study related factor that adherence rate can increase by 27% when we measure more than two professional outcomes. While it decreased by 11% when we have more than one follow-up points, and also it decreased by 13% when we implement the study over six months. While for practitioner related factor, we find that the adherence rate decreased for practitioners who manage back pain and increased by 13% for practitioners managing neck pain. While for KT intervention related factors, the adherence rate increased by 16% for educational meetings that lasted more than four hours and increased 12% for education meetings that provided more than one time, and increased by 21% when we deliver KT intervention for longer periods, like up to six months. And it decreased by 22% for two

to three intervention delivered, and also it decreased by 32% for KT intervention when it was delivered virtually. Next please.

And lastly, for retentional rate for the study related it can be increased by 61% - sorry by 31% - for studies that have more than one study group, and also increased by 14% when we measure more than two professional outcomes, and it decreased by 31% for before and after study compared with controlled trials, and it decreased 22% when studies that have more than one follow-up points. One for practitioner-related factor retention decreased by 12% for practitioner managing back pain. And for KT related intervention factors, we find that retention rate increased 13% when the educational meeting provided more than one time, and it increased 29% higher when the intervention, the KT intervention, lasts longer up to six months, and it decreased by 31% when we provide two to three interventions, or 13% decrease for more than three intervention delivered and it decreased by 35% when we provide the KT intervention virtually. Next please.

So, as a conclusion for all of these numbers, we can say that this review supports designing a study with more than one group of practitioners with a controlled arm, and design a study for shorter period of time, less than six months. And also the study should have only one follow-up point, no more. And also supports design study with single intervention for short period of time from one month to six months, and also conducting long educational meetings for more than four hours and deliver those educational meetings more than one time kind of repetitive educational meeting is more appealing. And these findings can be explained that practitioners have difficulty to commit to KT intervention within their busy daily schedule over longer of time. And also practitioners have limited ability to report outcomes over multiple full points. So concentrate on one all-day workshop offered multiple times is better than having several short meetings during their busy working day. Next, please.

This review has several limitations. First, several studies failed to report on the number of practitioners who were eligible to participate in this study. Also, second, other variables that could influence the visibility rate such as practitioner educational backgrounds or practitioners believe in KT interventions. We cannot consider those variables due to lack of information. Third, assessing the impact of each type of KT intervention separately on the visibility rate was not possible due to the overlapping of KT intervention in each study. Also, they included the study failed to report the number of participants who received each KT intervention separately. Our findings are restricted to KT intervention targeting musculoskeletal condition rehabilitation practitioners only, that may restrict applying those funding on other foster care disciplines. Next, please. As a take home message, we can say that single intense KT intervention, high frequency/short duration was more appealing for practitioner interventions which require less effort and less commitment and which saves practitioners time and have higher visibility rates. And also, KT researchers should consider the time required from healthcare practitioners to participate in the KT study to maximize the feasibility rates, and then this can increase generalizability of their findings. Thank you and happy to receive your questions if you have.