Table 2

*Themes Detailing the Barriers, Facilitators, and Related Factors for NPs’ Opioid Management*

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| **Study,**  **sample, and setting** | **Level of the Evidence** | **Themes detailing the Barriers, Facilitators, and Related Factors for NPs’ Opioid Management** | | | | | |
| **Nurse practitioner education** | **Patient subjectivity and patient education** | **Systemic change**  **and alternative treatment access** | **Interprofessional collaboration** | **Nurse practitioner prescriptive authority** | **Practice environment** |
| **Andrilla et al. (2020)**  498 NPs  and 116 PAs  Total (N=614)  Seattle, WA | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** |  |  | Barriers to incorporating buprenorphine treatment involving prescription experience  [Never prescribed vs Previously prescribed]   * Resistance from practice partners (*p<*0.0001) * Clinic policies (*p<*0.0001) | Barriers to incorporating buprenorphine treatment involving rural location   * Lack of specialized backup for complex problems (*p*<0.05) * Lack of mental health or psychosocial support services (*p*<0.05)   Barriers to incorporating buprenorphine treatment involving prescription experience  [Never prescribed vs Previously prescribed]   * Lack of physician support or collaboration (*p<*0.0001)   More NPs practicing in less restricted practice states than restricted practice identified lack of specialty backup as a barrier (*p=.0074*)  Comparing rural and urban respondents, more rural NPs and PAs reported resistance from their practice partners than urban NPs and physicians. (*p=.0195*) |  |  |
| **Craig-Rodriguez et al. (2017)**  1511 APRNs  Total (N=1511)  Florida State | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** | Barriers to prescribing opioids   * Poor educational preparation for prescribing controlled substances * Significantly lower knowledge and confidence in NPs lacking previous training in opioid prescription or lacking DEA registration |  |  |  | Barriers to prescribing opioids   * NPs could not prescribe opioids prior to implementation of schedule Ⅱ-Ⅳ prescriptive authority * NPs still lack this prescriptive authority in some states |  |
| **Franklin et al. (2013)**  425 (39% of total) APRNs  and Physicians  Total (N=856)  Washington State | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: High** | Facilitators for opioid management   * Affiliation with a healthcare organization providing opioid prescription guidelines and access to pain consultation * Provision of web-based continuing medical education training |  |  | Facilitators for opioid management   * Availability of innovative consultation or assistance methods such as telephone or video consultations with experts |  |  |
| **Mack (2018)**  25 APRN  Total (N=25)  Oklahoma State | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** |  |  | Facilitators for managing pain after upscheduling of HCMs.   * Availability of alternative therapies such as complementary medicine and interventional medicine   Barriers to alternative treatment   * Authority (Referring a patient to physical therapy requires a signature from the APRNs’ collaborating physician) | Facilitators for managing pain after upscheduling of HCMs.   * Having on-site physicians in states with restricted NP authority | Facilitators for NPs’ opioid prescription   * Advanced NP authority would increase patient access to care and decrease healthcare costs.   Barriers for managing pain   * FDA’s upscheduling of hydrocodone prevented NPs from prescribing it under their state authority * Upscheduling resulted in limited options for pain treatment, more referrals to pain management specialists, increased healthcare costs * Upscheduling limited the number of providers who provided most primary healthcare for patients |  |
| **Mazurenko et al. (2020)**  2 NPs  and Physicians  Total (N=23)  The US Midwestern | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** | Facilitators for managing opioids   * Educating medical staff about appropriate opioid prescription practices, particularly for patients with complex chronic conditions | Facilitators for managing opioids   * Educating patients about negative consequences of long-term opioid use and setting realistic pain expectations | Facilitators for managing opioids   * Strengthening hospital leadership efforts to decrease inappropriate opioid use * Consistently checking the state prescription drug monitoring program to prevent inappropriate opioid prescription for non-surgical inpatients |  |  | Barriers tomanaging opioids   * Hospitals contributing to opioid epidemic * For example, emergency department staff are challenged to identify the degree of patient pain, lack established patient relationships, and have severe time constraints * Pre-populated pain care orders for surgical patients result in opioid overprescription |
| **Merlin et al. (2019)**  24 NPs  and Physicians  Total (N=157)  The US | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** |  | Barriers for managing opioids   * Patients’ perceived stigma about opioid use and low health literacy; time constraints in clinics | Barriers for managing opioids   * Lack of insurance reimbursements for nonpharmacologic therapies for pain * Palliative care providers’ lack of systems based approaches and training addiction treatment | Factors for managing opioids for cancer survivors with chronic pain prescribed long-term opioid therapy   * Access to providers with expertise complementary to palliative care and a team-based approach to caring for patients within the palliative practice   Barriers for managing opioids for cancer survivors with chronic pain prescribed long-term opioid therapy   * Lack of access to providers with complementary expertise * Concerning attitudes toward complementary expertise providers toward patients |  |  |
| **Nikpour et al. (2021)**  128 NPs  Total (N=128)  The US | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: High** | Factors impact on managing chronic pain   * MSN prepared NP were significantly likely to report finding it difficult to manage pain most or all of the time compared to DNP prepared NPs. * Education level was significantly associate with NPs’ feeling prepared. | Barriers for managing chronic pain   * Patients’ unwillingness to use nonpharmacologic strategies associated with referring patient acupuncture, chiropractic care, and massage. | Barriers for managing chronic pain   * Low access to nonpharmacologic methods of pain care * Low insurance coverage |  | Barriers for managing chronic pain   * Authority by states limit their state practice environment   Facilitators for managing chronic pain   * NPs with full practice authority were less likely to report being inhibited by prescriptive authority laws than those without such authority (*p* =.06) | Factors impact on managing chronic pain   * NPs who treated patients younger than 65 only were significantly likely to use acupuncture than NPs who treat patients 65 and older. * NPs in specialty care settings were significantly more likely to use opioids than primary care NPs. |
| **Spitz et al. (2011)**  3 NPs  and Physicians  Total (N=26)  New York City, NY | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** | Facilitators for opioid prescription   * Provider and Patient education   Barriers for opioid management   * Provider level barriers of lack of education in main management | Facilitators for opioid prescription   * Provider and Patient education   Barriers for opioid management   * Provider level barriers of Subjectivity of pain * Patient/ family member reluctance to try opioid and concerns about opioid abuse by family members/caregivers. | Facilitators for opioid prescription   * Studies, demonstrating long-term benefit * Validated tools for assessing risk or dosing for comorbidities * Improved conversion methods | Facilitators for opioid prescription   * Peer support | Barriers for opioid prescription   * Concern about regulatory and or legal sanctions (all NPs) | Facilitators for opioid prescription   * 73% of physicians and NPs reported being much more comfortable prescribing opioids to patients receiving palliative or hospice care as compared to patients receiving treatment for chronic pain. |
| **St Marie, B. (2016)**  20 APRN  Total (N=20)  The US | **Level of Evidence:**  Level Ⅲ  (Dang & Dearholt, 2017)  **Evidence Quality: Good** | Factors impact on managing chronic pain   * Educating colleagues in healthcare on this care | Facilitators for managing chronic pain   * Educating patients and guiding them through the process of behavior change. * Applying risk strategies to keep their patients safe.   Barriers for managing chronic pain   * Patient preference to take medications rather than nonmedical interventions. | Barriers for managing chronic pain   * Difficulty to accessing nonmedical modalities for managing pain * Insurance coverage * Geographic access to providers of nonmedical modalities, | Barriers for managing chronic pain   * Shifting patient to APRN, made them felt uncomfortable with little support |  |  |